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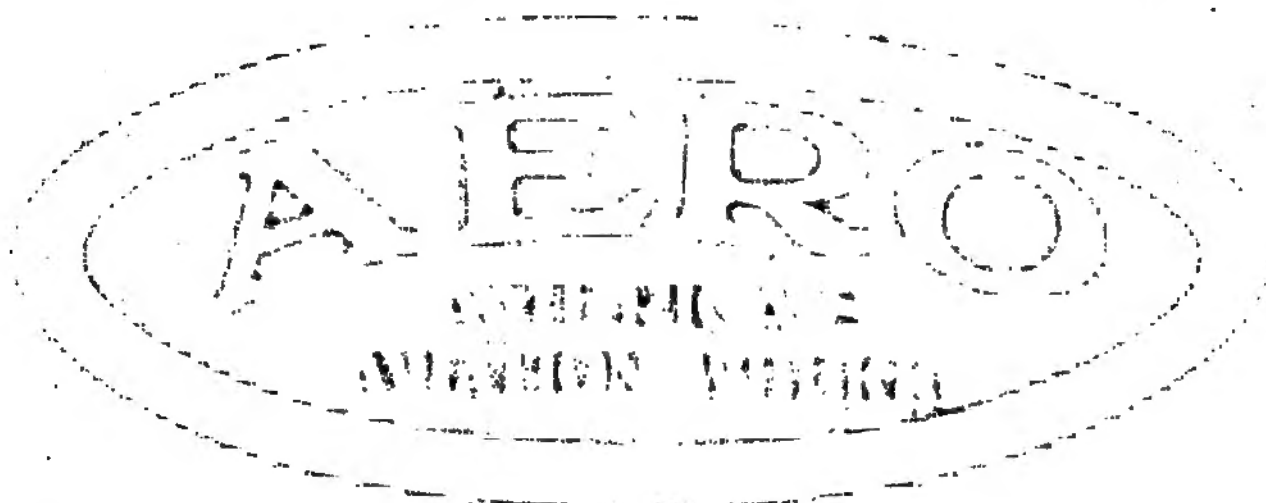
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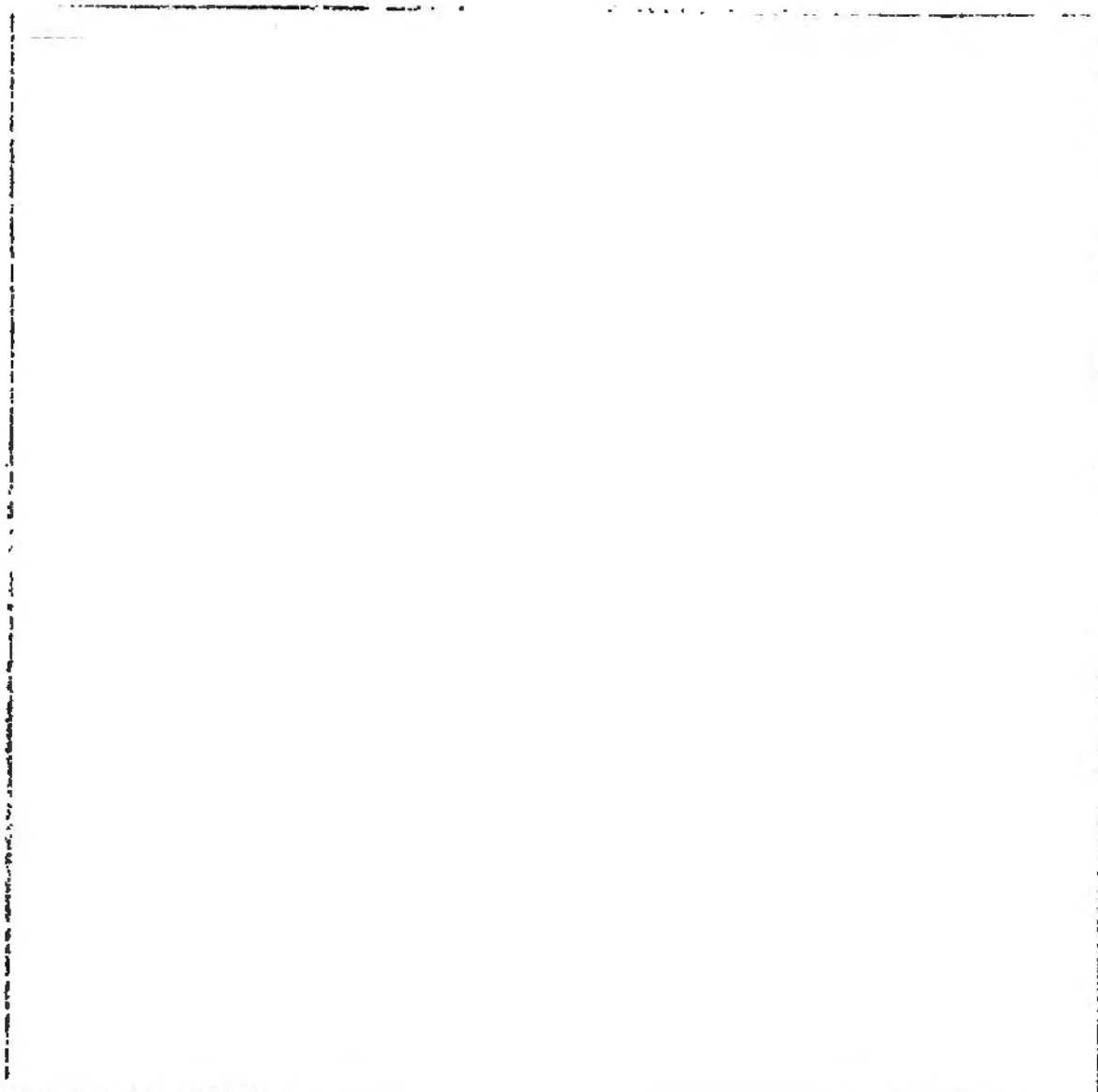
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**October 7
1911**



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San Francisco, California

St. Louis, Mo., 9-19-11

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San Francisco, Cal.

Vol. III
No. 1



October 7,
1911

Edited by E. PERCY NOEL

INTERNATIONAL RECORDS BROKEN AT NASSAU

PART OF THE SPLENDID HANGARS AND STANDS

New York, September 30.—From a flying point of view, the International Aviation tournament at the Nassau Boulevard Aerodrome, Long Island, has been an unqualified success. Some of the world's best fliers have been seen at their best; international records have been broken; four distinct types of aeroplane new to this country have been seen in flight; and for the first time in the United States three women fliers have appeared in open competition. In spite of the instruction and amusement provided, New Yorkers have failed to support ex-Lieut. Governor Timothy L. Woodruff, of New York, the financial backer of the Nassau Aviation Corporation, which promoted the meet under the auspices of the Aero Club of New York and with the sanction of the Aero Club of America. Besides having to face a financial loss, Mr. Woodruff has had other troubles to contend with. Residents

of Garden City induced Bishop Frederick Burgess of Long Island and Canon Chase of Brooklyn to appeal to Governor Dix to stop Sunday flying, while one day a number of the aviators practically threatened to go on strike unless they were assured that there was no truth to the rumor that was persistently heard along Hangar alley that Claude Grahame-White and T. O. M. Sopwith, the Englishmen, and at least one American aviator (Harry N. Atwood) were receiving large guarantees, said to be in the neighborhood of \$3,000 apiece. The insurgent aviators had a heart-to-heart talk with Mr. Woodruff and received satisfactory assurances that financially all the aviators were on the same footing.

If for no other reasons, the meeting will receive a prominent place in America's aviation history by reason of the fact that at Nassau boulevard the first aerial post was established

in this country. Another significant feature of the tournament was the prominent part played by our army and navy aviators.

The new machines on the ground were Grahame-White's baby biplane and Nieuport, the two Deperdussin monoplanes owned jointly by the two Englishmen George W. Dyott and Captain Patrick Hamilton, an army officer, and the miniature Henry Farman of Mlle. Helene Dutrieu. The Nieuport, fitted with a 100 horsepower Gnome, is by far the fastest machine in this country and to many the Deperdussin the most graceful. The baby Farman has been greatly admired for the details of its construction and its general fine workmanship. Grahame-White and Sopwith have been the largest prize winners. Both came well prepared for a heavy killing. In the speed events Grahame-White was invariably the winner with his Nieuport, with Sopwith a close second with his 100 horsepower Gnome Bleriot. In the biplane class, Grahame-White had a speedy and easily handled machine in his own "Baby"

SUNDAY, SEPTEMBER 24.

A crowd of nearly 30,000 people, including about 3,000 automobiles, turned out on Sunday, September 24. There was a lot of good flying, without an accident, although the number of aviators who took the air was 13. Two machines carried the mail, those of Ovington and Sopwith. The first event was a quick-starting contest. The distance of the run along the ground was measured and Ely, who ran only 96 feet, won. The distance of the others were: Beatty, 100 feet; Milling, 106 feet 8 inches; Grahame-White, 107 feet; Ellyson, 118 feet 1 inch; Sopwith, 118 feet 9 inches; Atwood, 122 feet 8 inches, and McCurdy, 129 feet.

A five-mile speed contest for biplanes was won by Ely, 11:12 1-5; with Captain Beck second, 12:29 2-5, and Sopwith third, 15:45. The relay race between teams of two aviators, one of the most interesting and keenly contested events, was won by Sopwith and Grahame-White, 13:15, with Ely and Arnold second, 15:45. The last event, a cross-country race for monoplanes, was won by Grahame-White in his Nieuport. He flew to Belmont park, then to Mineola and returned to the aerodrome in 17:05 2-5. Sopwith was second, 18:41 1-5.

Fearing arrest for breaking the Sabbath, by the sheriff of Nassau County, Mr. Woodruff told the aviators that no prizes would be given. It was understood, however, that the aviators would be compensated in some way later in the week.

MONDAY, SEPTEMBER 25.

The day's events on Monday, September 25, started with a speed contest of 10 miles (eight laps) for monoplanes. This race was easily won by Grahame-White (Nieuport) in 9:58. Sopwith (Bleriot) was second in 10:38 2-5. Sopwith, by sharply cutting the pylons held his own for six of the eight laps. The Nieuport swung wide, but eventually pulled away from its rival. Grahame-White covered one lap at the rate of 61½ miles an hour. A third flier, after covering two laps, decided that the company was too swift for him and came down. Prizes: \$600, \$300, \$100.

There was some trouble over the second event—bomb throwing. It was first announced that a woman passenger would have to throw the missile, but at the last moment, after some of the aviators had gone to considerable trouble finding escorts, this condition was removed. Sopwith, Beatty Milling and Arnold, all in biplanes, were the entrants. The measurements of all four efforts of each man, when averaged, gave Sopwith first place.

TUESDAY, SEPTEMBER 26.

Tuesday was a great day. At the appointed hour, 3:30 p. m., the first race, passenger-carrying for monoplanes, five miles, was started. The only starters were Grahame-White and Sopwith. The Nieuport won in 10:21 4-5, with Sopwith second in 10:59 4-5. The bomb-throwing contest was won by Sopwith with an average of 21 feet 10½ inches. Lee Hammond was second with 92 feet. Prizes: \$300, \$150. As in the case of the initial event, when it came for the 18 mile cross-country race for monoplanes, only two machines turned out, these being Grahame-White and Sopwith. The former made this victory number two for the afternoon by winging the distance in 16:38 2-5, whereas his fellow countryman required 17:40. Prizes: \$600, \$300, \$100.

The big event of the day was the smashing of the world's record for carrying two passengers by Lieut. T. De Witt Milling, who remained in the air for 1 hour, 54 minutes and 42 2-5 seconds. The world's record for carrying two passengers, besides the aviator, was made at the second Rheims meeting in 1910 by Mamet who stayed up 1 hour, 38 minutes and 40 seconds. The American record, made by George Beatty in Chicago, was 1 hour, 18 minutes and 22 seconds.

Beatty was in this contest, but after a flight of 29 minutes, 18 seconds was compelled to come down owing to engine trouble.

Tuesday was distinguished by the actual carrying of a sack of mail by Postmaster General Hitchcock, who went up with Captain Beck and dropped the letters and post cards in Mineola. It was on this day, too, that the aviators' strike occurred.

WEDNESDAY, SEPTEMBER 27.

There was a dearth of competitive talent on Wednesday. Only two of the four events scheduled were decided, and Sopwith was the star performer. Sopwith won the weight-carrying contest and the passenger-changing race. There

GLENN CURTISS AND CAPTAIN BECK.

and Sopwith with his Burgess-Wright fitted with a 50 horsepower Gnome had a speedy and useful combination.

Of the 37 entries, the following aviators—and aviatrixes—have made flights:

Harry N. Atwood (Burgess-Wright), Lieut. Henry H. Arnold, U. S. A. (Burgess-Wright), George W. Beatty (Wright), Captain Paul W. Beck, U. S. A. (Curtiss), Helene Dutrieu (Henry Farman), George W. Dyott (Deperdussin), Lieut. Theodore E. Ellyson, U. S. N. (Curtiss), Eugene Ely (Curtiss), Earle L. Ovington (Bleriot and Queen monoplane), Claude Grahame-White (Nieuport and Baby Grahame-White), Lee Hammond (Baldwin), Andre Houpert (Moisant monoplane), J. A. D. McCurdy (McCurdy-Willard), James C. Mars (Curtiss), Lieut. T. De Witt Milling, U. S. A. (Burgess-Wright), Matilde Moisant (Moisant), Harriet Quimby Moisant, Abraham Raygorodsky (Moisant), Ignace Semizouk (Queen monoplane), Fred P. Schneider (Schneider biplane) and T. O. M. Sopwith (Burgess-Wright and Bleriot).

The contest committee was composed of G. F. Campbell Wood, secretary of the A. C. A., chairman; Charles Jerome Edwards, Colgate Hoyt, Harold F. McCormick, Augustus Post, Alan R. Hawley and Philip Wakeman Wilcox. The starter and chief field officer, W. Irving Twombly.

LEE HAMMOND AND LIEUTENANT MILLING FINISH A CLOSE RACE

were no second and third awards in the first named event, while in the other, the army officers, Lieut. Arnold and Lieut. Milling, filled second and third positions respectively. The other events—passenger-carrying for altitude and the cross-country race for biplanes—were postponed at the request of the aviators until Saturday, when the prize money will be double.

The weight-carrying contest was open to all types of aeroplanes, greatest live weight to count, regardless of speed. The distance was five miles. Lieut. Arnold took up Lieut. Lyons, who weighs 221½ pounds. Arnold dropped down after 2½ minutes, declaring that the task was too difficult. The combined weight of the two men was 390½ pounds. Lieut. Milling essayed a flight with W. J. Carver and Midshipman

work, in what proved to be the final trial, netted him first money by over a minute margin, his time being 13:23 3-5. Arnold was second and Milling third. Prizes: \$300, \$150, \$50.

THURSDAY, SEPTEMBER 28.

Thursday was largely army and navy day, the military aviators figuring prominently in the list of prize winners at the close of the afternoon. The first event was the passenger-carrying contest for biplanes, started off in heats. The first heat, (4 laps) was between Lee Hammond and Lieut. Milling, the former winning rather easily in 7 minutes 31 seconds. The second heat was between Captain Beck and Sopwith. Captain Beck won in 6:15 1-5. It took the Englishman 8:10 1-5 to cover the distance. The third heat was won by Lieut. Ellyson in 6:51 3-5. Lieut. Arnold and Beatty both failed to finish in the fourth heat. The final was won by Captain Beck, who finished alone. Lieut. Ellyson "stubbed" his wings at the first pylon, while Hammond was forced to descend

POSTMASTER GENERAL AS POSTMAN—Left to right, POSTMASTER GENERAL HITCHCOCK, CAPTAIN BECK, ATTORNEY-GENERAL WICKERSHAM

S. Erder. This trio totaled 450½ pounds, and that they had next to no chance to succeed was proven by the fact that they were up only five seconds. Profiting by these failures, Sopwith took up with him E. Burd Grubb, who scaled 151½ pounds, Sopwith topping the beam at 159 pounds. This was a better combination and the English finished in 9:07 3-5 and won the first prize of \$600.

The passenger-changing contest was one of the most popular events of the week. The conditions were that the flier should carry a passenger two circuits, or half a mile, alight, leave his passenger, pick up another, repeating this procedure three times. The three fliers who took part in this event all used Burgess-Wright machines, the competitors being Lieut. Arnold, Lieut. Milling and Sopwith. Sopwith's

GENERAL FREDERICK DENT GRANT WATCHING FLIGHT

after covering seven of the 10 laps in the final. Prizes. \$600, \$300, \$100.

In the alighting contest, Lieut. Milling won easily, dropping his machine to the ground at a dead stop 11 feet from the mark. Sopwith, who took second money, was 30 feet from the mark, Captain Beck, 52 feet and Lieut. Arnold 60 feet. Prizes: \$300, \$150, \$50.

The cross-country event for monoplanes was again between Grahame-White and Sopwith with a third Englishman, George W. Dyott, also a starter. Dyott dropped out at Belmont park through running short of gasoline and Grahame-White won with Sopwith second. Prizes: \$600, \$300, \$100.

Lieut. Arnold took up into the air George C. Wilson in a Burgess-Wright fitted with a wireless apparatus, and from a height of 600 feet sent the following "sealed" message to Harry M. Horton, the aero-wireless expert at a receiving station on the ground: "Harold F. McCormick, Chicago. Up in the air 600 feet. We welcome the Chicago delegation to Nassau boulevard.—Aero Club of New York."

Mlle. Dutrieu won the Ives de Villers prize, a purse of \$500, and also established a new American record for duration for women. She was up in the air 37 minutes and 22 seconds.

FRIDAY, SEPTEMBER 29.

There was no flying on Friday, owing to the rain.

SATURDAY, SEPTEMBER 30.

When the flying started on Saturday, September 30, Captain Paul W. Beck, Lieut. Ellyson, Lieut. Arnold and Eugene Ely, each with a passenger, entered an endurance altitude contest. Lieut. Arnold won, and descended after 1 hour 6 minutes 37 seconds. Captain Beck remained up 9 minutes 32 seconds, Lieut. Ellyson, 12 minutes 45 seconds, and Ely, 10 minutes 19 seconds. Prizes: \$600, \$300, \$100.

flying. He failed, making only 28½ miles in the 30 minutes, but on the fifth lap he traveled the 1¼ miles in 1 minute 13 2-5 seconds. He got \$600 for beating Sopwith, and a special prize for the record.

There was some rapid going in the mail-carrying contest. As usual, Sopwith was there when it came to getting the money. Sopwith outpaced Covington, Captain Beck, Lieut. Ellyson, Lieut. Arnold and Lieut. De Witt Milling, thereby picking up \$500. Covington won second prize, \$300, and Captain Beck came in for third, \$100.

SUMMARY:

Sopwith, with Hary England, passenger, averaged 20 feet 6¼ inches; George W. Beatty, Miss G. O'Hagan, passenger, averaged 33 feet 3¼ inches; Milling, Dr. Reddy, passenger, averaged 36 feet 8¼ inches; Arnold, Private Revere, passenger, averaged 70 feet 4¼ inches. Prizes: \$300, \$150, \$50.

In a cross-country race of 18 miles, nine biplanes started. The course was to Belmont park, back to Mineola, to Belmont park again and back to the field. The race was a most spectacular one, and kept the spectators greatly interested. In this event Lieut. Ellyson, in his Curtiss, made the fastest time, covering the distance in 21:05 4-5. Lee Hammond was second in 23:12; Captain Beck, third, in 25:02; Grahame-White, fourth, in 25:05; Lieut. Arnold, fifth, 30:38 3-5; Lieut. Milling, sixth, 31:43. Prizes: \$600, \$300, \$100.

Although designated on the programme a "Journée des Dames," no women were seen piloting machines. Mlle. Dutrieu would not fly because she said she had learned, to her surprise, that her prize winnings would be deducted from her \$2,000 guarantee.

The cross-country race between Sopwith, in his Bleriot, and Louis Disbrow, in a racing automobile, for a purse of \$1,000, ended in a fiasco. Sopwith got back to the field first, but owing to a misunderstanding of the point where the race was really to commence, it was decided to hold the race again, another day. The crowd numbered about 2,000. The wind averaged 14 miles.

It was towards the close of the day that the unfortunate accident happened to Dr. C. B. Clarke. Clarke was a novice, but had hoped to get his license the next morning. He had been practicing in a 35 horsepower Queen monoplane. He was killed while flying for the first time a 50 horsepower Gnome machine. Clarke attempted to make a right-hand turn while ascending, and losing control of his machine, plunged to the ground.

MOISANT WILL HAVE NEW QUARTERS

Garden City, Long Island, N. Y., September 30.—In a week or so the Moisant Aviation School will move from the Garden City Flying field to the New Hempstead Plain Aerodrome. The new Moisant training ground is nearly 1,000 acres in extent. Its extreme length is about two miles and its average width a little over a mile. In front of the hangars there is a particularly level strip of ground 500 feet long for the students to take their first lessons on, and also two practice courses each 400 feet long, on either side of the hangars. There is also a one-and-a-quarter straight-away track and a five-kilometre circular course for speed trials.

The hangars are perhaps the best so far erected in this country. They are five in number and are built of steel and concrete, trussed with North Carolina pine, covered with black fireproof paint. These sheds are each 40x50 feet and have a clearance of 12 feet 6 inches. Each has two windows and a door at the back. The front doors are made of steel and are of the rolling variety. The floors are of concrete. There is a 10-foot fence around the field. At the entrance to the aerodrome there is an office for the field manager. Here, also, will be found the observatory for taking wind pressures, etc., and also telephones.

Andre Houpert will be the chief flying instructor, Philip Wakeman Wilcox, the field manager, and A. C. Triaca, the technical director.

As soon as the conditions for next year's Gordon Bennett race are announced, a course will be laid out on the new field to fit these conditions, which course will be free to all American aviators after the coveted trophy to practice on.

OVINGTON DESCRIBES FIRST AERIAL POST TRIP TO MRS. OVINGTON

Sopwith was the most accurate bomb thrower, his best for three throws being 16 feet 5 inches. Lieut. Ellyson's best was 32 feet, and Ely's 33 feet 10 inches. Prizes: \$300, \$150, \$50.

The crowd was keenly anxious to see Mlle. Dutrieu and Miss Quimby in their cross-country race. Miss Moisant's monoplane early outdistanced the Farman, and the little French woman soon gave up and returned to the field. Miss Quimby won \$600. Mlle. Dutrieu did not come down; she remained in the air and went after the American endurance record for women, which she captured by staying aloft 1 hour 4 minutes 57 2-5 seconds.

Grahame-White also punctured a record, the time for one lap of the course, a mile and a quarter. He started in his Niluport to race with Sopwith in a distance contest for monoplanes, but Sopwith quit after two laps. The Englishman set out to break the world's record for 30 minutes of

WHERE EXHIBITION FLIGHTS WILL BE WANTED NEXT YEAR

CONNECTICUT.

Danbury, first week in October.—Danbury Fair, Sec. G. M. Rundle, May use aeroplane. Large grounds, located one mile west of Danbury.

ILLINOIS.

Hardin, latter part of September.—Hardin County Fair, Sec. Chas. W. Lamar. Will use an aeroplane. Grounds cover 10 acres with four acres perfectly level for starting.

INDIANA.

Chinney, latter part of September.—Sec. James Adams. Will use an aeroplane on percentage basis. Grounds cover 30 acres, near railroad depot, and form natural amphitheatre.

Fairmount, Indiana Fruit Fair Ass'n, Sec. J. R. Little. Will not use aeroplane.

Montpelier, July or August.—Montpelier Fair Ass'n, Sec. C. L. Smith. Will use an aeroplane on percentage basis. Grounds cover 50 acres and are located three blocks from city limits on brick street.

Rockport, third week in August.—Rockport Fair, Sec. C. M. Partridge. Will use an aeroplane on percentage basis. Grounds cover 40 acres, with start from oval of half-mile track. Centerfield is clear.

IOWA.

Allison, first week in September.—Butler County Fair Ass'n, Sec. W. C. Shepard. Will use an aeroplane on no flight no pay guarantee basis. Start from infield of half-mile track.

Britt, about September 15.—Hancock County Fair Ass'n, Sec. H. A. Carey. Will use an aeroplane on percentage basis. Grounds cover 10 acres and are rectangular in shape.

Donnellson, date uncertain.—Lee County Fair Ass'n, Sec. Chris Haffner. Will not use aeroplane.

Independence, third week in August.—Buchanan County Fair Ass'n, Sec. A. G. Rigby. Will use an aeroplane on cash or percentage basis. Flights must be guaranteed. Start from oval of half mile track. Grounds one block from railroad depot.

Malcolm, August 20-21.—Malcolm Fair, Sec. James Norvak. Will use aeroplane on percentage basis. Grounds cover 28 acres and have good race track infield for starting.

Sac City, second week in August.—Sac County Fair Ass'n, Sec. Gus Strohman. Will use an aeroplane on no flight no pay guarantee basis, for four days. Grounds cover 22 acres in shape of figure one and are two blocks from heart of city.

KANSAS.

Lawrence, date uncertain.—Lawrence Fair, Sec. Elmer E. Brown. Will not use an aeroplane next season.

LOUISIANA.

Shreveport, first week in November.—Louisiana State Fair, Sec. Louis N. Brueggerhoff, Shreveport, La. May use an aeroplane in 1912 on guarantee basis if exhibition scheduled for October 30-November 5, 1911 is successful. Grounds cover 104 acres and are three and one-half miles from city.

MICHIGAN.

Bad Axe, two days of first week in October.—Huron County Agricultural Society, Sec. Henry Stewart. Will use aeroplane in 1912 if exhibition scheduled for October 4 and 5, 1911 is successful. Start from infield of half mile race track.

Cadillac, September.—Northern District Fair, Sec. J. M. Terwilliger. May use aeroplane. Exhibition this season was partial failure.

Charlotte, September.—Eaton County Agricultural Society, Sec. V. G. Griffith. May use an aeroplane. Grounds cover 40 acres and are inside city limits.

Marquette, first week in September.—Marquette Fair, Sec. W. A. Ross. Will use an aeroplane. Grounds cover 40 acres.

MISSOURI.

Sedalia, September 30-October 6.—Missouri State Fair, Sec. John Stinson, General Delivery. Will use an aeroplane in 1912 if exhibition on above dates in 1911 is successful. Grounds cover 200 acres and field is said to be one of the best for flying in the west.

MONTANA.

Lewistown, date uncertain.—Leweston Fair Ass'n, Sec. George E. Martin. May use an aeroplane. Grounds cover 40 acres, and square and located one half mile from the city. Ely flew from them successfully this year.

Missoula, during October.—Western Montana Apple Show, Sec. A. J. Breitenstein, Chamber of Commerce, Missoula. Will use an aeroplane under no flight no pay contract. New grounds will be built early in 1912.

NEBRASKA.

Aurora, about September 1.—Hamilton County Agricultural Society, Sec. S. B. Otto. Will use an aeroplane next season under no flight no pay contract. Pay after each flight. Start from half mile race track oval.

Chouron, during September.—Dawes County Fair Ass'n, Sec. B. F. Pitman. Will use an aeroplane next season under no flight no pay contract. Pay after each flight. Grounds cover 70 acres and are located one-quarter of a mile from the city. C. F. Walsh flew successfully this season.

NEW MEXICO.

Albuquerque, second week in October.—New Mexico State Fair, Sec. J. B. McManus. Will use an aeroplane in 1912 if exhibition scheduled for October 9-14, 1911 is successful.

NEW YORK.

Trumansburg, last week of August or first week in September.—Union Agricultural and Horticultural Society, Sec. Guy O. Hinman. Not definitely decided if aeroplane will be used. Start from inside half-mile race track. Aeroplane used successfully this season.

OHIO.

Kenton, date uncertain.—Kenton Fair, Sec. F. U. Jones. May possibly use an aeroplane next year. This year's flights called off on account of rain. Grounds cover 45 acres and are located on railroad.

Lima, date uncertain.—Allen County Agricultural Society, Sec. C. A. Graham. May use aeroplane.

Wapakoneta, August 30-September 2.—Wapakoneta Fair, Sec. A. E. Schaeffer. Will use an aeroplane. Grounds cover 40 acres and are located three-quarters of a mile from the city.

OKLAHOMA.

Thomas, about August 21.—Chamber of Commerce, Sec. Charles A. Grant. May use an aviation exhibition in place of street fair. Will probably use more than one flier. Start from oval of large race track.

PENNSYLVANIA.

Hanover, third week of September.—Hanover Fair, Sec. J. B. Miller. May use aeroplane. Exhibition this year successful. Good grounds.

Mansfield, date uncertain.—Smythe Park Ass'n, Sec. R. C. Longboiham. May use an aeroplane in 1912 if 1911 exhibition is successful. Grounds cover 38 acres and are in city.

SOUTH CAROLINA.

Walterboro, November 7-10.—Calleton County Fair Ass'n, Sec. W. W. Smoak. Will use an aeroplane upon percentage basis. Grounds are 11 acres square and are located in town.

TENNESSEE.

Memphis, any date.—Tri-State Fair Ass'n, Sec. Frank F. Fuller. Association will rent their grounds to aviators or teams for exhibitions or meets. Grounds cover 11 acres and are on edge of city. Held a successful three-day exhibition on them this year.

WASHINGTON.

Spokane, October 1-7.—Spokane Interstate Fair, Sec. R. H. Cosgrove. Will use an aeroplane under no flight no pay contract. Flat rate must be decided on. Grounds cover 50 acres and are inside city limits. First exhibition in city will be held October 2-8, 1911.

WISCONSIN.

Beaver Dam, date uncertain.—Beaver Dam Fair Ass'n, Sec. C. W. Harvey. May use an aeroplane next season under a flat rate per flight contract. Grounds are square and cover 30 acres.

Lancaster, during September.—Grant County Agricultural Society, Sec. W. P. Rowden. Will use an aeroplane. Grounds cover 20 acres and are one mile from the town.

Milwaukee, during summer months.—Milwaukee Aero Club, Sec. Gladstone Cherry, Cromwell Block, Milwaukee, Wis. Will hold an exhibition or meet. Grounds are three miles west of city.

CANADA.

Calgary, Alberta Province, date uncertain.—Calgary Industrial Exhibition Company, Ltd., Sec. E. L. Richardson. May use an aeroplane. Grounds cover 93 acres and are practically in the town.

Pictou, Ontario, about May 24.—Pictou Fair, Sec. M. R. German. Will use an aeroplane at flat rate per flight. Grounds cover 14 acres and are located near ocean.

DEMAND FOR FLIGHTS WILL BE GREATER IN 1912

The outlook for the exhibition flier during the season of 1912 is extremely bright. The very successful season just closed in the northern half of the country will be certain to repeat itself, in the opinion of show-men, and professional fliers are likewise hopeful in their prophecies for the year to come. In the west and middlewest it has been hard to find competent aviators during the past month and more than one of our better fliers found it necessary to refuse contracts because of lack of room on his schedule. Many were booked solid throughout the year.

Everywhere except in the eastern states, fair secretaries report that free aeroplane attractions caused a large increase in attendance at their fruit and stock exhibitions and they do not propose to go without such good drawing cards again. One manager in Iowa asserts that the biplane exhibition he used was the greatest attraction he had ever booked. It brought many people to the grounds who said it was the first time they had come to that particular fair in 20 years or more. Other managers say that through aeroplane exhibitions they have extended their district several miles, to bring in people from long distances who had never found it convenient to make the trip before. Incidentally, the smaller cities of the country are now fully awakened to the fact that a short meet or exhibition is a much better form of advertising than the old street carnival and many 1912 bookings of this sort will be found.

A change will appear in fair contracts. Where before the aviator was guaranteed a certain sum, the new contracts will specify a flat rate per flight, and above all flights must be guaranteed.

In the east where the drawing power of aeroplanes has been tested to the utmost, the managers, skeptical of further results are demanding either a flat rate or a percentage contract. On a percentage basis the aviator flies either for a percentage of the gate receipts or for a percentage based upon the increase in attendance over years when there were no aeroplanes. Another form of this contract gives the aviator a percentage of the gate receipts on all paid admissions above a certain number, say 5,000 or more, according to the average attendance during the past few years. In this way he earns in proportion, as the machine draws people.

It is possible that the reader will gather from the above that the eastern attitude toward flying is not favorable. Far from it. In Connecticut for example the Danbury Fair has found aviation an exceptionally good attraction in past years and is using aeroplanes during its fair this season, from October 2 to 7. If this exhibition proves a good drawing card aviation will undoubtedly find space on the 1912 program. The management reports that the public seems never to lose interest in aviation, being always more or less interested to witness exhibitions after seeing flying once.

The west coast must be judged by reports from aero clubs. In San Diego, Cal., the aero club has held four exhibitions during the summer, one of three days duration and the others of two. Each exhibition was given by a single aviator. At the first the attendance was 10,000 people, at the second 2,000, at the third, on account of bad weather it reached its lowest figure, 1,000 and at the fourth 2,000. All of these were paid exhibitions given by a single machine and aviator. G. F. Monroe, secretary says that the day of pay meets has very nearly gone in his section. "We will have to give it in connection with some other attraction in the future, although we are going to try it again in January or February on a basis of 30 or 40 per cent of the receipts to the club and 60 or 70 per cent to the aviator."

Farther up the coast the Spokane, Wash. Aero Club, E. W. Galbraith, secretary, 1317 Fifteenth avenue, has had no exhibitions. Galbraith says it is not probable that any will be attempted during the coming season, although no definite plans have been made. It has been found by the management of various exhibitions in this section that the interest of the people increases greatly after each exhibition held in their territory.

Illinois, it seems, will always be a good flying state. Although it has been the scene for many successful exhibitions during the summer, plans are going forward for an active season next year and it is very likely that the amount spent on aviation by small fairs will be in excess of that used this year. There are many fairs held in Illinois and as a consequence, several of them missed aviation this year. Their attitude is indicated by the Hardin County Fair, which is now planning for its next year's flying, although its dates are still uncertain. It comes in the latter part of September.

Indiana has seen a good deal of flying also, but to use the words of J. P. Chrisney, president of the Spencer County Fair Association, "They always want more." Needless to say, Chrisney, Ind., where the fair is staged, will see flying during the last week in September, 1912 if an aviator will agree to fly on a percentage basis. The fair has 30 acres of ground, situated in a natural amphitheatre.

At Montpelier, Ind., the fair association of the same name wishes to book an aeroplane attraction for next July or August of 1912. The fair has an average attendance of 10,000 and the aviator must sign a percentage contract. The fair grounds are three blocks from Montpelier on a brick street, assuring easy haulage. It is possible that the Rockport Fair, at Rockport, Ind., will book an aviator on the percentage basis for the third week in August of 1912. The management has not definitely decided on this as yet. The best starting ground available is the oval of a half-mile race track.

Encouraging conditions prevail in Iowa. At Allison, the Butler County Fair Association will book an aviator for the first week in September on a no flight no pay basis. Some sort of flight must be guaranteed. An exhibition was attempted there this summer by John D. Cooper and it proved a great drawing card, but stormy weather prevented the flier from making an exhibition and in consequence it will be necessary for the management to guarantee a flight in order to draw crowds next year. A good price will be paid if this is done. Starts are made here from the infield of a half-mile track.

The Hancock County Agricultural Society, of Britt, Ia., will book an aeroplane attraction about September 15, 1912, on percentage of increased attendance. The management has already decided upon this and the date is assured, although the number of days on which flights will be scheduled is uncertain. From Independence where the Buchanan County Fair and Racing Association holds its annual festivities comes an assurance of a probable date for next season, during the third week in August. A very successful exhibition was given there this year by Otto W. Brodie and the management is enthusiastic over the results of the affair.

"It proved to be a splendid drawing card," says A. G. Rigby, secretary of the fair, "and it increased our receipts more than 70 percent over last year. Many people came every day to see the aeroplane and some of them had not been here before in 20 years." Aviator Brodie, who was booked through your (AERO'S) aviator's directory gave good satisfaction.

Next year's flier at Independence must guarantee a flight, but he may contract upon either a cash or a percentage basis. The Malcolm Fair, of the Iowa town of that name, will book an aeroplane for about two days, August 20-21, 1912. No exhibition was had in Malcolm this season and next year's flying will be upon a percentage basis. Sac City will book an aeroplane for four days of the second week in August upon a no flight no pay basis next season. The flying comes in connection with the Sac County Fair, which will be held this year beginning October 6 and will feature a Curtiss aviator.

Kansas news takes on a sadder import. In Lawrence aviation did not seem to draw. It happened that the exhibition was for a paid admittance fee and this may be responsible for the fact, because paid exhibitions sometimes attract more people on the outside of the fence than are drawn through the gates. Elmer E. Brown, secretary, states that he does not intend to have an aeroplane attraction for next year. "The people having seen one did not appear particularly desirous of viewing another," he said.

While New Orleans, La., seems practically a dead town for aviation, the smaller cities in the state are very active and promise many bookings for the next season. In Shreveport, where the State Fair Association is located has had one exhibition for this season, will have another October 31-November 5 and is planning one for the season of 1912. The exhibitions are held under the management of the State Fair board and are given on grounds covering 104 acres, located three and one-half miles from the city.

In Michigan, after a very active season for aviators the interest in aviation is increased, if anything. The Huron County Agricultural Society will have an aeroplane exhibition October 4 and 5 and if this proves successful it will undoubtedly book a similar attraction for about the same dates next year. At Benton Harbor, under the management of the State Fair board, a paid exhibition was held in June which was spoiled by bad weather and proved a financial failure and in this case no exhibitions are considered for 1912. At Cadillac there will probably be another exhibition booked in 1912 in spite of the fact that an exhibition held in connection with the Northern District Fair this summer was rather unsatisfactory. The aviator booked failed to fly the first day and this had a depressing effect upon the attendance for the rest of the week. Charlotte has had no exhibition so far but may hold one next season, in connection with the Eaton County Agricultural Society. Marquette will use an aeroplane during the first week in September.

"An exhibition was booked this year," said W. A. Ross, secretary, "but the company contracting was prevented at the last minute from sending machines."

Massachusetts does not seem a promising field for next year's exhibition work. Aside from college activities at Harvard and Tufts nothing definite is promised for next year. Missouri has provided a number of good engagements for fliers, in spite of the fact that things did not look well at the beginning of the season.

The Missouri State Fair, which is held in Sedalia has shown the Curtiss Aviators from September 30 to October 6 this year. Last year an exhibition was given by the Wright company. Plans are not definite for the season of 1912, but we have the declaration of John T. Stinson's secretary of State Fair board, that people are generally anxious to see a second exhibition flying after their first sight of such an event.

Leweston, Mont., has Eugene Ely July 1. His flying proved an exceptional drawing card and one of the largest crowds in the history of the Leweston fairgrounds was brought together. No plans have been made for next season as yet, but as this year's exhibition was so successful it is very probable that some sort of aviation attraction will be in order next summer. A. J. Breitenstein, secretary of the Western Montana Apple Show, says the following of a one day exhibition given early this summer: "It proved an extra good attraction and everyone who saw it was asking for more. I shall certainly have at least one aviator here next year." Breitenstein's contract will be on the no flight no pay basis and the aviator must guarantee

a flight. The booking will come during October on the new grounds which the Apple Show is providing.

In Nebraska the "pay after each flight" contract is in vogue. There are two definite openings in this state at present, one at Aurora, under the auspices of the Hamilton County Agricultural Society, the other at Chadron, superintended by the Dawes County Fair board. At Aurora a three-day exhibition brought a crowd of 15,000 people to the grounds, while a series of six flights in the same length of time by C. F. Walsh brought 10,000 people which was considered extra good in both cases.

The only information obtainable from New Mexico at the present writing concerns the New Mexico State Fair at Albuquerque, which will be held October 9 to 14. Of course nothing definite can be said as to its plans for next season. New York activity likewise must be judged from one town, Trumansburg. The Union Agricultural and Horticultural Society which holds its fair during the last week of August and the first week in September is undecided as to its next year's attraction, although this year's exhibition was considered wonderfully successful. "It was the best drawing card we have ever had," said Guy O. Hinman, secretary. "Charles Morok who flew this year made good and he told us we had one of the best fields he had ever seen."

THE REAL BEGINNING OF AVIATION

By J. W. MITCHELL

That an inventor should die before the fruition of his labor is not remarkable. It has happened too often. But that a man should die, practically broken-hearted and rewarded with nothing but ridicule after having solved the greatest human problem since the development of the phonetic alphabet, that is remarkable and pitiable, too. Yet such was the case of Samuel Pierpont Langley, late secretary of the Smithsonian Institution and the man who made the present day development of aviation possible.

It was altogether notable, not only the work accomplished by one man, but the lack of recognition accorded him. Beginning in

Then, remarkable as it may seem, the invention was allowed to lie fallow for another decade. The inventors and aspiring aviators of the world were not asleep. They knew what Prof. Langley had done and they were working night and day to duplicate his success. But so far as the general public was concerned the victory of the first mechanical flight might as well not have been won. And it took the first of the bird-men ten years to catch up with what Langley had done. Now, five years after his death, the Smithsonian Institution has just published the record of his research entitled the "Langley Memoir on Mechanical Flight." It is a minutely detailed account of the years of experiments leading to the achievement of actual mechanical flight in 1896, an account of persistent determination to accomplish what he believed must be possible though the scientific world said it could not be done. Except for one magazine article there was hardly a word of popular appreciation of this work printed from the time it was done till after Prof. Langley's death.

This does not mean that the other workers in the field of mechanical flight did not know what Prof. Langley had done. The Wright brothers, Glenn Curtiss, Louis Bleriot, Henry Farman, and Santos Dumont all knew him and his researches. His work had saved them all years of experiment that they never would have undertaken except that Prof. Langley's work had showed them the goal was really attainable. All these men were of a younger generation than Langley. His contemporaries were Octave Chanute, and Sir Hiram Maxim, the only two other scientists of that day who believed in the possibility of artificial flight. With them and with the younger men who profited by his work, Prof. Langley was neither secretive nor selfish. He had a deep-seated and perhaps not unreasoning distrust of the newspapers and for that reason had few if any friends in the newspaper world to defend or explain after the apparent failure of his man-carrying machine.

This big machine was built at the request of the War Department after Prof. Langley had demonstrated the possibility of mechanical flight, and it should be remarked here, that the big machine did not fail to fly. It never got a chance to fly, being tried twice and each time being wrecked by a failure in the launching device before it got into the air. These two failures were quite expected by Prof. Langley himself. He had predicted a series of failures before the big machine could be launched. In fact he had made more than twenty trials before he succeeded in launching his steam driven model which afterward flew repeatedly and without difficulty.

In view of what we now know about aviation, there is not the least doubt that any one of a dozen good aviators here and in Europe could put wheels under the Langley man-carrying machine now and fly it at the first attempt. It is better made, and has less weight and more supporting surface than any machine that is flying today, and it has a better engine and more powerful than any that was used up to the summer of 1909.

That Prof. Langley was unselfish in his work was indicated by the fact that he never took out a patent, though he made a record of all his important designs with the Patent Office. He exchanged visits with Sir Hiram Maxim and Chanute and any of the younger men who wanted help in his line of research were always welcome to

PROF. LANGLEY (left) AND HIS ASSISTANT, MANLEY

1887, he managed by nine years of unceasing toil and scientific research to make a practical flying machine. In his own words he demonstrated the possibility of mechanical flight "in the only satisfactory way; by making a machine that would really fly." It opened up a new dimension to man.

whatever he had developed. There was one instance that was simple honesty on his part but honesty that would not have been duplicated everywhere, when he refused to take advantage of the work of the Wright brothers. Their use of the flexing wing became known to a visitor to their experiment camp in South Carolina. This man wrote to Prof. Langley and offered to sell him the device. Prof. Langley simply made copies of the correspondence and sent it to the Wrights.

This was not because he lacked money to develop the idea himself. After the apparent failure of the man-carrying machine, he was offered unlimited private capital to continue the work. But he declined. He said that if the American people through Congress would not support the work that had been done primarily for their benefit, he did not care to continue it on a commercial basis. Any one who chooses can give his own verdict on this course. The practical result was that it delayed the development of aviation for ten years.

It is not to be inferred from the foregoing statement that Prof. Langley was the pioneer in the desire for human flight. Man has wanted to fly since the beginning of recorded time. Mythology is full of flying men, winged horses and magic carpets. Coming closer to the present, there were attempts made to fly before the middle ages. One of the note books of Leonardo de Vinci in 1500 shows the sketch of a heavier-than-air machine. Coming into the early Victorian era, men of attainments like Sir George Cayley, W. H. Wrenham and Stringfellow all made earnest studies of the subject. That they failed was due partly to lack of scientific equipment and partly to the fact that the time was not ripe. It has been said time and again that the marvelously light and powerful gasoline engine made flying possible. It may have made it easier it is true, but Prof. Langley forced the hand of Time for he drove his first flying machines with a steam engine, though he always admitted that gasoline was the ideal motive power and used it in his later engines.

Now that flying has become an everyday affair it is hard to realize that at the beginning of the present century few people even believed in the possibility of mechanical flight. Going as far back as 1887, the hard-headed business man classed the subject absolutely with perpetual motion and considerably beyond the pale of psychic investigation. Charlatans and fakers had occasionally exploited flying machines for their personal benefit, but the whole idea was so fantastic that a scientist risked his scientific standing if it were known that he even considered the subject worth investigating.

Yet Prof. Langley so considered it. He said frequently that he believed there was something fundamentally wrong in the accepted notions of the sustaining power of air and of air resistance to forward motion. Only recently it was possible to prove by mathematics that it was impossible to fly. Just before the beginning of Prof. Langley's serious work in aerodynamics, a French mathematician, and a good one, had proved by the use of existing formulae that a barn swallow to reach the speed it was known to attain must have more than the strength of a man. Prof. Langley said in view of such obviously absurd conclusions, he saw nothing to do but make some original investigations himself. He made them and one of the first things he did was to upset the Newtonian Law of air resistance for moving bodies that had stood for three hundred years principally because nobody had thought to question it. Prof. Langley found that in pulling a brass plate through the air at the end of a revolving arm that he called his "whirling table", it actually took less power to move the plate fast than it did to move it slow. From this was established Langley's Law in place of that of Newton.

But as to business skepticism of his investigations. It took money to carry on the experiments he was making and there was no immediate certainty of financial returns. Prof. Langley, who was then at the Allegheny Observatory, went to a number of wealthy Pittsburg men and asked for money to help his research. Their response was natural enough for the period. They charitably considered him crazy and with one exception declined to even consider the proposition. Among those who declined was Andrew Carnegie. The one exception was Wm. Thaw, a wealthy but then little known steel magnate. He gave \$5,000.00 toward the investigation and in recognition of this aid Prof. Langley dedicated to Thaw his important book, "The Internal Work of the Wind", a book that probably every aeroplane builder has read but of which few of the general public know even the title.

The whirling table experiments proved such a revelation that Prof. Langley followed further the line indicated by his investigations. It was an untrodden field. There was no literature of the air to guide him. He had to originate the experiments needed and then design the apparatus by which they could be carried out. He experimented with all shapes, sizes and fabrics for sustaining surfaces. By mounting aeroplanes of different sorts on the end of his whirling arm and recording through electric registers their exact lift and drift and the power expended in moving them, he found what surface was necessary to sustain a given weight at a given speed and

QUARTER-SIZED MODEL THAT FLEW SUCCESSFULLY, DRIVEN BY GASOLINE ENGINE

what power was needed to make the whole self supporting in the air. These experiments were years in progress. It seemed at the time as though little were being achieved for the expenditure of time and energy, but a fact here and there was gleaned and it was all just that much more than had been known previously of the great unexplored ocean of the air.

The outcome of all this research work was proof, conclusive to Prof. Langley's mind, that mechanical flight was possible. Then came the question, if it be possible how was it to be obtained.

Naturally the bird was the great exponent of actual flight. It was studied as was everything else connected with the problem. Stuffed birds were mounted on the arm of the whirling table and experiments made in "soaring flight", that objective of many present day investigators. It was found that these experiments were negative. Soaring flight with a dead bird took more power than could be expected from the internal power of the wind itself.

The bird has been an attractive and misleading teacher to almost all students of flight. Prof. Langley wanted to see if there was not some exercise of commonly hidden ability that enabled a bird to fly. To this end he developed the "photographic gun". This was a telophoto camera mounted on a regular musket stock that in turn was set on a universal joint above a tripod. The camera had a big finder with cross hairs so that when the gun was put to the shoulder the operator could practically wing-shoot his quarry, seeing through the finder just what he had on his plate and firing the camera from the trigger of the gun.

There was a platform erected within camera range of this photograph gun and meat was put there regularly for the benefit of buzzards and crows that would not otherwise poise on the wing. Hundreds of pictures were made of them flying, lighting and rising, some of the most wonderful pictures in existence. But they yielded no momentous secret. All that the bird has done for aviators up to date is to give the "lifting curve," that fore and aft curve wherein and wherein alone the aeroplane simulates the bird's wing.

The only study of flight seemed to be flight, and Prof. Langley gave several years to the construction of aeroplanes driven by rubber bands. The flight of these was short and erratic and yielded little for the months spent in observation. It was evident, he said in his notes, that some power had to be found that would last longer than twisted rubber bands. It was this that set him to actually building the first steam-driven models, destined to be the first flying machines actually to fly.

Thus in 1891 he was at the end of what may be termed the first period of his investigations. The sum of his findings had been that the air had inertia enough to support a body many times heavier than the air if that body moved fast enough. He likened it to a skater moving swiftly over thin ice that would break if he stopped but would bear him if he skimmed it rapidly. It was for this reason he called his flying machine an "aerodrome" or air runner.

To be continued next week.

BROOKINS FLIES IN ST. LOUIS

St. Louis, Mo., September 30.—Taking advantage of a lull between heavy rains Walter Brookins in a Wright flew twice this afternoon in order not to disappoint the large crowd gathered to witness the opening of the free public exhibition of the Aero Club of St. Louis. The ground was soggy and the air heavy with dampness. Besides a puffy wind was blowing, but all that seemed to concern Brookins was the fact that moisture might ruin his new suit.

It had been intended to open the week with a day of spectacular flying, but a heavy, soaking rain fell all morning and at 10:30 o'clock A. B. Lambert, president of the Aero Club of St. Louis, officially announced that the flying would be postponed. One of the events of the day was to have been a flight by Brookins from the railroad station where his machine lay after his return from an exhibition tour, to the Fairground Park, but when it became known that the meet was postponed the machine was partly assembled and shipped to the grounds on a large stake wagon.

At 3:45 in the afternoon Lambert, Brookins and C. A. Elton, the Wright flier who crossed the state of Ohio, appeared on the field. The biplane was then partly assembled. The wheels being off and many of the wires loose. Brookins glanced about and noted the number of people.

"Do you want a flight?" he asked Lambert.

"I leave it to you. If you can give it to them do so—we want to make good on this meet," said Lambert.

Brookins pulled out his watch.

"I will fly at 4:30," he announced briefly, "if you can clear the field."

The crowd, good natured and cheerful, retired behind the ropes with but slight urging by a small detail of park police. Almost as soon as the field was cleared Brookins was ready and the machine was wheeled over to a starting place. At 4:21 he took the air for a 15-minute whirl, during almost all of which a light rain fell. He flew away over the housetops south of the grounds, travelling six or eight blocks.

He came to earth and started again almost immediately, this time flying in sunlight for a sudden rift had appeared in the clouds to the west of the field. He circled above the field for 15 minutes and at one time gave a beautiful exhibition of flying quartering to the wind, travelling clear across the grounds with his machine held diagonal to the strong wind which had already torn the clouds overhead into long streamers. He descended a few minutes before five in the afternoon and remarked that he had encountered bad gusts of wind over the trees at the eastern end of the field.

20,000 SEE BEACHEY AT DUBUQUE

Dubuque, Iowa, October 2.—The flight of Lincoln Beachey at Nutwood park on September 28 and 29 was northeastern Iowa's introduction to air travel. It was witnessed by over 20,000 people, at least 19,500 of whom probably had never seen an aeroplane before. The first day was one of clouds and intermittent showers.

When the plane left the ground at 4 o'clock the rain was pelting down. Through it Beachey traveled to the south end of the park, then turned and followed back above the race course. On the turn he made one of his famous dips so successfully that for a moment the machine appeared to be literally turning upside down. On righting it glided along above the track 50 feet in the air to the north end of the park, there mounted to about 150 feet and then with a sudden turn, came swooping down toward the crowd. As they scattered in a panic it glided off again 50 feet above their heads. The descent a few minutes later was made near the starting place.

The second flight, a race with five motorcycles, proved the thrilling event of the meet. The plane sped around the course five times at the rate of 54 miles an hour, and came in at the finish 200 yards in the lead of the motorcycle riders. On crossing above the goal, instead of descending, as the crowd had expected, Beachey took advantage of the rain and the low-hanging clouds to make an ascent above them. The plane mounted up into the air in big corkscrew spirals through the rain and straight into a cloud, out of it into another, and out again and into still another. The third disappearance lasted a full minute. Then suddenly as it had gone the machine came volplaning toward the ground at a sharp angle. When within 60 feet of the earth it began to drop slowly, and as it touched the earth sped along a short distance to the place in which it was to be stored for the night.

On the second day, a bright, sunshiny one with a fairly strong north wind blowing, the aviator made three flights. The first was for the most part an exhibition of volplaning, the second the plane raced with an automobile, and at the conclusion of the race made a long flight over the city, mounting to 4,000 feet. In the third flight Beachey engaged in a sham battle with Company A of the Iowa National Guard. The battle consisted of a sham fusillade on the part of the troops, and the dropping of bread loaf bombs into their midst by the aviator as he darted back and forth above them.

ENGLISH OFFICER LOSES HIS LIFE

Henon, England, September 17.—Lieut. R. A. Cammell, R. E., one of the foremost British army aviators, lost his life here today while trying out a new Valkyrie monoplane recently given to the government by the Valkyrie syndicate. Opinions differ as to the cause of the accident, some giving credit to a rumor that the engine was not properly installed, and others saying that it happened through Lieut. Cammell's being unfamiliar with the controls of the machine. He had previously flown both a Bristol biplane and a Bleriot monoplane.

The fall came shortly after 5:40 o'clock in the evening. Lieut. Cammell had spent the entire day in testing out the motor and in making the plane ready for flight, for he had intended not only to take the machine out for a short practice spin, but to follow this with a long cross-country flight to Farnborough, the British military headquarters. While this might seem a rather foolish undertaking in an entirely new machine, it must be remembered that he was an experienced flier, already knowing two types, and a pilot of nearly 11 months' duration.

Those who saw the accident say that it occurred while Lieut. Cammell was making a spiral descent and banked too sharply, allowing the machine to slide sideways to the ground. It had been noticed throughout his flight, which consisted of a number of turns about the field, that he was banking too sharply, probably through lack of knowledge of the controlling principle of the Valkyrie, which resembles the Farman system just enough to be confusing to an aviator accustomed to it, as Lieut. Cammell was.

Lieut. Cammell was 25 years old and one of the most clever pilots of the English Air Battalion. Before he entered the aeroplane service he was a dirigible pilot. The immediate

cause of his death was a concussion of the brain caused by his being thrown from the machine and striking upon it. At an inquest held after the accident, it came out that the mechanics had been working upon the engine all day with the belief that the shaft was untrue, but it was said that they had convinced themselves that everything was all right before the officer started out on the machine.

CHANGING PROPELLERS HELPS H. BEACHEY

Gering, Neb., September 6.—Hillery Beachey left here this evening for St. Louis, having completed a three-day engagement. He was not able to fly today on account of the high wind, but yesterday evening gave an eight-mile flight that greatly pleased the spectators and the fair board. The flying brought a great number of strangers here, and the crowd was so large that at times it threatened to rush in and surround the machine. The altitude here is about 4,000 feet.

On the first day of his exhibition, Wednesday, Beachey found that his propeller was too heavy for the altitude he was flying in. His plane lifted off the ground with the wind helping him, but when he tried to turn, the machine dropped to the earth and had several parts broken. The propeller, which measured 7 foot diameter, 6 foot pitch and had a blade width of 11 inches, was changed for one of 7 foot diameter, 5½ foot pitch and a 9-inch blade, and on the second day the machine flew successfully, developing a much greater lift.

ROBINSON WILL HAVE A LONG MAIL ROUTE

St. Louis, October 3.—Mail-carrying for the United States government will be the feature of the free public exhibition of the Aero Club of St. Louis, which will be continued tomorrow. Hugh Robinson, the Curtiss hydroaeroplane operator, will carry the first United States mail by aeroplane over water, thus suggesting great possibilities for the practical use of the aeroplane in mail carrying.

Robinson will carry mail from St. Louis to Alton, Ill., a real inter-city delivery of about 25 miles, on Saturday. On Thursday, Friday and Saturday, Walter Brookings, Tom Benoist and possibly other aviators will be postmen, carrying mail from Kinloch Aviation field to Fairground park, about 12 miles.

Authority to establish the aerial mail service was obtained from Postmaster-General Hitchcock by A. B. Lambert, president of the Aero Club, through the local postoffice, last night.

Robinson has a \$500-race on for Saturday with a motor boat. The boat owner declared that the Curtiss hydro could not outdistance it on the water of the Mississippi. Robinson had a different opinion. The result is a wager. Robinson bet \$500 against J. J. Ryan's money that he could beat the Reliance IV, the Cincinnati man's speed boat, in any straight race with or against the current.

HOW NIEUPORT WAS KILLED

Paris, September 17.—On the morning of September 13, while he was giving a course of military instruction in the maneuvers of Cor 2, No. 6, the aviator-constructor Edouard Nieuport was the victim, at Verdun, of a terrible accident while he flew in the presence of the military authorities.

Leaving for Chalons on his monoplane, Nieuport landed at Chalons after an excellent voyage, despite the violent gusts of wind. Upon his descent he was congratulated by Captain Eteve. Soon after General Perruchon, of the corps, general Roques, permanent inspector-general of military aeronautics, and several other officers came to felicitate Nieuport upon his voyage.

Upon the order of Colonel Estienne and despite the strong wind, the aviator took to the air and executed some marvellous turns to the admiration of all. Unfortunately, in the course of one of those turns in which he excelled, while the machine tilted and weighed down dangerously at the nose, a down-gust of wind turned it over and the monoplane dove. Nieuport cut out the spark, but the machine crashed to the ground with a terrible cracking.

Despite the care and effort of the major-doctors and Doctor Doyen, it was impossible to save Nieuport from death. The fall had caused injuries in the pulmonary region which were fatal.

CHARLES BAYSDORFER IN FLIGHT IN HIS MACHINE.

BAYSDORFER AND OTHERS FLY AT DANVILLE, ILL.

Danville, Ill., September 30.—Rene Simon, A. Raygorodsky and Charles Baysdorfer, all Moisant aviators, left here this evening after having taken part in a three-day exhibition on September 26, 27 and 28. The weather continued somewhat squally throughout the three days and Simon was left to do most of the flying, Baysdorfer and Raygorodsky being less experienced. Today was Rene Simon's last day under the International management, and he had hoped to make a farewell flight from the Danville field, but the wind was too high and he gave it up.

On Tuesday he made two good flights and totaled 53 minutes and 11 seconds in the air. It is claimed unofficially that he made a speed of 73½ miles per hour on the first flight, which lasted five minutes and 52 seconds. On Wednesday Simon made two flights in spite of threatening weather, one of five minutes' duration and the other of 11. On Thursday he could only make one flight of five minutes' duration. The wind was strong and puffy.

The Baysdorfer machine is a headless biplane with Curtiss allerons and was practically set up for flight at the meet here, when it was discovered that certain parts had been left behind and the assembling was not completed until yesterday. There is a rumor going about that the Moisant company is to reorganize its force of aviators and that Simon is to stay with them. Simon says he will sail as soon as possible for France, where he will rest for some time.

DYOTT'S DEPERDUSSINS DESCRIBED

Nassau Boulevard, Long Island, September 23.—The first two Deperdussin monoplanes ever seen in this country have been imported by Geo. N. Dyott, an Englishman, who last year was associated with Dr. Walden at Mineola. The machines are now housed here and are attracting a great deal of attention. The first impression the machines give is one of neatness in design and workmanship.

The fuselage of the monoplane under its fabric covering is of the ordinary box-girder type, but is peculiar in that the top and bottom longitudinals are parallel from engine to rudder, while to afford more accommodation for engine mounting, tanks and pilot, a semicylindrical well is provided under the front section, consisting of a light wooden framework, covered inside and outside with veneer. The fuselage is pretty to the eye, but is so shallow that the pilot sits on it rather than in it.

Another unique feature is the method of attaching the cross bracing wires to the small aluminum sockets accommodating the struts. The landing carriage is a neat and light wheel and skid combination, the axle being sprung by the conventional radius-rods and elastic shock-absorbers. The cross-members of the chassis are of steel tubing, and it is noticeable that the four main struts are covered with canvas. Very little wire bracing is used, but rigidity is given to the structure by two wooden diagonal struts in compression. These struts extend in front of the chassis proper and are curved up in hockey-stick fashion to form a protection for the propeller. Shocks occasioned by rough landing are distributed over as much fuselage area as possible by means of stranded cables which pass under the well of

the body and over grooves at the top of the chassis struts, thus forming a kind of cradle.

The method of mounting the motor is, without doubt, neat in the extreme. A sheet-steel cap fits over the front end of the fuselage, and to this is screwed in the usual manner that flat plate keyed to the Gnome crankshaft, which would form the fly-wheel if the cylinders were kept stationary. Aluminum inspection doors are provided for access to the magneto, etc., and an aluminum dome is arranged over the top of the motor to prevent the spray of oil from the exhaust reaching the pilot.

The weight of the wings when the machine is at rest is supported by two struts, erected vertically from the front of the main body, in order, at the same time, to strengthen the wings against end stresses when in flight. They are of ample proportions near the base, as they also serve to accommodate the front wing spar. The construction of the wings follows conventional lines, with the exception that the trailing edge is laced to the ribs and is allowed a small degree of flexibility. Aluminum plates are fastened on the under surface of the wings against the main body to protect the fabric from becoming saturated with oil. Their brownish tint is due to the treatment of the fabric with "Emaillite," a preparation that renders it weather and oil proof, and endows it with exceptional tautness. This same varnish is also employed to proof the main frame covering and the tail pieces.

The control is extremely neat, and the movements are more or less natural. A wheel, mounted in the center of an inverted U-shaped sweep of wood, is rotated for the correction of lateral balances, while a to-and-fro motion controls the elevation. Steering is effected by the usual form of pivoted foot-lever.

The wires from the warping-wheel are carried to a rock-lever on the rear cross-member of the chassis, and after passing over pulleys on the skids, each wire branches into three. These are connected to clips on the rear wing spar. By rotating the wheel to the left, therefore, the whole of the rear spar of the right wing is pulled down, while the similar spar on the left wing rises a corresponding amount, and vice versa.

The combined oil and petrol tank is mounted in the front of the pilot, between the two wooden masts, and gauges are fitted so that he is constantly acquainted with the state of his fuel supply. A small reserve petrol tank is arranged under the seat, and the fuel is fed under pressure to the main tank by a pump on the right of the pilot. Hinged to the rear of the tail plane is the rectangular elevator, while forward of the rudder extends a small vertical stabilizing fin. A neat skid, hinged in the center and flexibly anchored at the top, protects the rear of the machine from ground contact.

Continued on Page 22.

During the present season the Curtiss Exhibition Company has contracted for, and carried out, exhibitions at 13 state fairs; namely, South Dakota, Vermont, Montana, West Virginia, Wisconsin, Missouri, Maine, Alabama, New Mexico, Oklahoma, Utah, Georgia and North Carolina. Contracts are coming in to the company's office every day from secretaries of state fairs throughout the country, particularly fairs in the Southern states.

E. PERCY NOEL, Founder-Editor

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The Editor is pleased to consider MS and photographs for publication, but only material that is likely to prove of interest to the readers of AERO. The Editor cannot undertake to answer technical inquiries except in the columns of AERO.

TO SAVE THE COMPETITIVE MEET

Whatever the cause may be, it is a fact that open aviation meetings held this year have in all cases brought financial losses to the organizers rather than profits. It has been true of the well planned affairs at Chicago, Boston and New York.

It is a very simple matter to point out probable causes of the loss, peculiar to each case; but when we do so we are far from sure that we touch the heart of the difficulty after all.

We might say that the Chicago Meet was expensive because money was wasted by inexperienced managers, that rain and difficulties between the manage-

ment and the aviators spoiled the prospect of great attendance at Boston and that attacks of the New York dailies upon former Lieutenant-Governor Woodruff, who happens to be interested in real estate adjoining the Nassau aerodrome, prevented people from realizing that events worth seeing were in progress on Long Island.

But somehow or other these local explanations do not seem to clear the matter, and one begins to wonder whether it is practically impossible to hold a successful competitive meet under the systems tried this year.

We think it is. We believe that real competition of any kind always draw crowds and the more interested the people are in the principals and their equipment, the better the attendance. But there is not always enough gate money procurable, however, to cover the expense of preparing special grounds, stands, fences and the hundred and one details that cost money, and then the offering of thousands of dollars' worth of prizes.

In the case of the Nassau Boulevard Meeting just closed the management perhaps charged against the meet all of the recent expenses of improving the grounds. This probably amounted to nearly \$10,000. This item did not belong on the statement of the meet. Possibly the management paid some large guarantees. If it did so it was foolish, because expense money would have satisfied aviators already in the vicinity.

The prize list was not very large, but it was probably ample for the purpose, provided the prizes and events were so arranged that every contestant would have a good chance to win something. It is reasonable that if the prize list was not greater than the gate receipts for the week, the management should not have lost much money and if the receipts were a little more than the prizes, all expenses could have been paid.

One reason why there are not more meets and more success for the meets held, is the difficulty to know how much can be expected at the gate to offset the prize list. A very simple remedy for this is a point system. Under this system points would be credited the aviator winning and taking places in the events, the number of points for each contest being gauged by the difficulty of the contest. At the end of the meeting the gate receipts or the greater percentage of the money received there could be divided according to the number of points made by each contestant during the meet.

This plan would not be as attractive to aviators as fixed prizes, but by the contestants appointing their own manager to check the gate, they could at least be assured of getting their proper share of the money earned.

By the adoption of such a plan meetings could be held on any properly improved aviation field and the public interest would probably be as great in the point winning as in the cash prize winning. The organizers of the meet need risk only expense money to the aviators who attend and the actual running expenses of the meet.

Unless some such system is adopted, there may be no more competitive open meets in this country.

Activity of Aviator and Builder

Peter Christman, an 18 year old boy, of Green Bay, Wis., has built a monoplane which will be tried out in a few days. He will have it on exhibition at the Winnebago County Fair, Oshkosh, Wis.

An inventor in Racine, Wis., Martin Rasmussen, has a new machine ready for trial. It has an arrangement of planes and parachutes which it is said makes a sudden drop impossible.

C. W. Gullick, of Muskogee, Okla., has built an aeroplane along original lines. He will have it on exhibition at the Muskogee fair.

Harold Brinker, who has been attempting aeroplane flights at Cheyenne, Wyo., for several months, has shipped his Curtiss-type biplane to Mitchell, Neb., where he thinks the heavier atmosphere will be better for practice flights.

Beckwith Havens, one of the latest to join the Curtiss squad, won \$2,007 for the Curtiss company flying at Chippewa Falls, Wis., the week of September 14.

George MacWilliams, of 696 Furley street, Winnipeg, Canada, is organizing an aero club in that city. He is desirous of meeting with all others in his town who are of the same mind.

The Curtiss-type biplane, built in Danville, Ill., by Charles Baysdorfer and Claude J. Coddington, has been shipped to Mineola, L. I., for trial flights. The machine, it is said, could have been assembled for work in Danville in very quick time, when the makers suddenly decided to take it east.

Marten Gairens McCormack, an aviator, desires to warn all birdmen to be very careful in contracting to fly at Cadillac, Mich. He says that the Fair Association is now holding a machine of his for failure to fly, due to engine trouble and other accidents he could not foresee. He also says the Fair Committee acts in a most ungentlemanly way and is entirely ignorant of aeronautics and regardless of human life.

William Osborne, of Des Moines, Iowa, is making short jumps in his monoplane at the field of the Hyperion Motor club. A few days ago he broke one wing of the machine in alighting, but the damage was quickly repaired and Osborne is going on with his jumps.

C. C. Witmer plans to race a motor boat owned by R. C. Pryor on Portage Lake, Wis. The boat is claimed to be one of the fastest 26-foot speed launches in the world.

D. C. De Hart, who has been making a number of flights at Stockton, Cal., with a Farman biplane, was slightly injured on Sunday, September 17, while attempting a cross-country race with a bicycle. He announced Saturday that he would attempt to race to Modesto, 30 miles distant, but the collision of his machine with a tree, during which the aeroplane sustained serious damage, closed the performance.

George B. Harrison has arranged with the officials of the Panama-Pacific International Exposition to distribute publicity for the great enterprise to various aviators in all parts of the country, through the medium of the California Aeronautical Society. Pennants will be placed on machines, with the permission of the owners, at all meets in the United States, together with literature describing the plans for the great aviation meet being planned for the exposition.

THE DAIRY OF FLIGHT

SATURDAY, SEPTEMBER 9.

Ashtabula, Ohio.—C. A. Elton flew from fairground field out over breakwater in harbor. The distance was three miles and he was in the air 22½ minutes.

Tulsa, Okla.—Carl Mahr, a young German, flew. Machine took fire while in the air but he succeeded in guiding it to a safe landing.

SUNDAY, SEPTEMBER 10.

St. Paul, Minn.—Frank Coffyn and Howard W. Gill flew at state fair. On last flight they were up at the same time.

WEDNESDAY, SEPTEMBER 13.

Milwaukee, Wis.—Lincoln Beachey flew.

Menominee, Wis.—Rene Simon flew.

THURSDAY, SEPTEMBER 21.

Clarinda, Iowa.—Lincoln Beachey flew.

Riverhead, L. I.—Harry N. Atwood flew. He also made the cross country trip from Hempstead here, arriving at 9:45 this morning.

FRIDAY, SEPTEMBER 22.

Chippewa Falls, Wis.—Beckwith Havens flew. Late in the afternoon while travelling cross country his engine died and in the vol plane that followed he hit an unseen telephone wire, badly damaging

SUNDAY, SEPTEMBER 24.

Grand Forks, N. D.—Thomas McGoey flew over the city for some time and then crossed the Red river to east Grand Forks. He was in the air nearly an hour.

TUESDAY, SEPTEMBER 26.

Muscatine, Iowa.—Lincoln Beachey flew before a crowd of 15,000 people. He attained an altitude of 5,500 feet.

Danville, Ill.—Rene Simon flew twice totalling 55 minutes in the air.

WEDNESDAY, SEPTEMBER 27.

Monroe, La.—Carl Mourfield flew cross country 20 miles and made his landing here on the fair grounds. During the flight he had to cross a wide swamp of dead timber and water.

Santa Ana, Cal.—De Kor, a novice flew from Santa Ana to Dominguez field Los Angeles, a distance of 40 miles in 55 minutes. Previous to the flight he had made only one test and a few short flights in the neighborhood of Santa Ana.

Danville, Ill.—Rene Simon flew.

Vandalia, Ill.—Tom Benoist flew before a large crowd.

THURSDAY, SEPTEMBER 28.

Evansville, Ind.—Hugh Robinson flew before a crowd of 40,000 people. He was up five times attained an altitude of 2,000 feet and totalled 47 minutes in the air.

Danville, Ill.—Rene Simon flew.

Gering, Neb.—Hillery Beachey flew.

SUNDAY, OCTOBER 1.

St. Louis, Mo.—Walter Brookins flew twice.

Raviating—A. Jannus and H. E. Jenkins Guilty

If Paul Peck bumped into the Washington Monument, would it Rex Smith?

A Wright machine flew over a mining town. Was it Orville?

When Atwood flew from Grant park did Chicago?

If in falling the empennage caught in a tree, where would the fuselage?

If the Chicago cops handcuff reckless aviators, will there be a Lincoln Beachey?

If the courts decide Wilbur and Orville Wright, how much will Bleriot?

If Beaumont flew across the continent, do you think Atwood?

If Jack Johnson takes to aeroplaning, will we still have Grahame-White?

If Ovington had not been in the Chicago meet, who could we have beaten Tom Sopwith?

A buzzard can soar with an engine. I wonder if Captain Willoughby's Pelican?

If Walter Fairchild can't make his machine fly, why doesn't he let Frank Schumaker?

Quick! Watson, call a cab; he is Raviating.

Aero Club of Saint Louis

Temporary Office: 19 South Broadway, St. Louis.

E. Percy Noel, Secretary.

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BULLETIN

PROGRAM OF EVENTS

OCTOBER 4—3:30 TO 5:30—FAIRGROUND PARK.

- No. 1—Speed contest (2 miles).
- No. 2—Accurate landing.
- No. 3—Quick starts.
- No. 4—Fancy flying.

OCTOBER 5—3:30 TO 5:30—FAIRGROUND PARK.

- No. 1—Speed contest (3 miles).
- No. 2—Accurate landing.
- No. 3—Quick starts.
- No. 4—Bomb throwing.
- No. 5—Fancy flying.

OCTOBER 6—3:30 TO 5:30—FAIRGROUND PARK.

- No. 1—Speed contest (3 miles).
- No. 2—Accurate landing.
- No. 3—Quick starts.
- No. 4—Bomb throwing.

OCTOBER 7—3:30 TO 5:30—FAIRGROUND PARK.

- No. 1—Speed contest (5 miles).
- No. 2—Bomb throwing.
- No. 3—Altitude.
- No. 4—Cutting off engine in air.
- No. 5—Fancy flying and spiral dip—Walter Brookins.

MISSISSIPPI RIVER.

Hugh Robinson.....Curtiss hydroaeroplane
St. Louis aviator, and most experienced in handling the hydroaeroplane, will start and land on the Mississippi river, in the vicinity of the McKinley bridge and the Eads bridge.

Hugh Robinson has been selected to make the Mississippi river flight from Minneapolis to New Orleans, starting October 11.

OCTOBER 8—3:30 TO 5:30—FAIRGROUND PARK.

- No. 1—Speed contest (5 miles).
- No. 2—Cutting off engine in air.
- No. 3—Spiral dip—Walter Brookins.
- No. 4—Bomb throwing.
- No. 5—Fancy flying.

FREE MEET SIGNALS

In the middle of the field, on two bridges, will be displayed a flag, or flags, the color of which will show what aviator is in the air or about to ascend. For instance, if a blue flag is displayed, it means Walter Brookins is flying.

If an American flag is displayed with a color, it indicates the winner of an event.

Color.	Aviator.	Machine.
Blue.....	Walter Brookins	Wright
Red.....	Andrew Drew	Wright
Green.....	John D. Cooper.....	Pine
Brown.....	Hillery Beachey	Helmana
White.....	Tom Benoist.....	Benoist
Purple.....	H. F. Kearney.....	Benoist
Pink.....	Charles Zornes	
White and Purple...	Pupils of Benoist—Harry Rafferty, John Woodlief, Alfred Boullet, B. N. Elek, Charles Griffin.	
Black and White....	C. O. Prouse	Prouse

NIEUPORT HAS INTERESTING FEATURE

By J. H. DUCKWORTH

Nassau Boulevard, Long Island, September 23.—The Nieuport monoplanes of Claude Grahame-White and E. D. Anderson are the fastest aeroplanes now in this country. Mr. Anderson only recently received his machine from France. To-day it was finally assembled.

Genealogically the late Edouard Nieuport's machine may perhaps best be described as descended on one side from the Robert Esnault-Pelterie, and on the other from the Santos-Dumont. But while the R. E. P.'s steadily developed in the direction of the greater speeds, greater power, and greater weight, together with very practical attempts at reducing head-resistance, and while the Santos-Dumont machines became steadily lighter and lighter, Nieuport kept steadily to his "medium" ideal of a small, light, fast and scientifically designed machine which would fly with small power, because it was properly designed to do so.

By careful wing design, the internal construction of which is the subject of a special patent, he produced a wing which, it is claimed, gives the maximum of lift with a minimum of drift, and is extremely light, though at the same time so strong that only a single stay-wire is needed to hold it down to the chassis. By further experiment and attention to detail, he produced a fuselage which gives remarkably little head-resistance, while at the same time giving ample accommodation to the pilot and plenty of strength to withstand shocks of landing. Then he managed to cut the landing chassis down till he produced a little affair of steel tubes and a leaf spring, with a couple of tiny wheels. This looks quite inadequate, and yet in practice stands quite as much knocking about as some more elaborate and much more weighty arrangements. The result of all this work is a machine which looks at first sight like a miniature R. E. P., and requires about the same power as a Demoiselle.

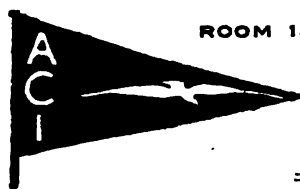
Having dealt with the history and development of the Nieuport monoplane, let us now consider some of its most salient mechanical details. Its principal dimensions are as follows: Span, 27 feet 6½ inches; length, 24 feet 7½ inches; chord of wing at fuselage, 6 feet 10 inches; chord at wing tip, 5 feet 8 inches; engine, 70-horsepower Gnome; propeller diameter, 6 feet 7½ inches; pitch, 4 feet 5¼ inches; weight, without pilot, 495 pounds. It is very readily packed up for transport, and in this condition occupies a space 21 feet 4 inches long, 5 feet 10 inches wide and 6 feet 2½ inches high.

The fuselage is of the covered-in variety, and is principally remarkable for its great depth at the forward end of the machine, whence it tapers sharply back to the tail, the area of side resistance of the fuselage in front of the center of gravity being approximately half that of the fuselage behind the center of gravity. The fuselage is built up of wood in much the same way as on the Bleriot, and is entirely covered with fabric. Owing to the depth of the fuselage in front, the pilot is provided with a very roomy cockpit.

The main plane, although having a framework built up in the usual way, is notable for a plane section which is quite different from that of any other machine. The dipping front edge, properly speaking, is entirely dispensed with and the center line of the section is practically horizontal over the first third of the width of the plane.

The nonlifting tail plane is practically semicircular and enters the air circumference first. The two elevator flaps are likewise semicircular, but have their circumference trail-

THE AERO CLUB OF ILLINOIS



OFFICE
ROOM 130, THE AUDITORIUM
CHICAGO

FLYING FIELD
FIFTY-SECOND AVE. AND
TWENTY-SECOND ST.

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BULLETIN

To the Members of the Club.

How many of the 500 members of the club have visited the flying field at the 50th avenue station of the Douglas Park Metropolitan Elevated? The directors wish to begin soon a canvas for increased membership in the club, and to do this desire cooperation of all the present members. Cooperation cannot be secured, however, unless all the members know what advantages the club now has, and what its prospects are. Members are urged to visit the flying field and the club office at Room 130, the Auditorium and get acquainted with each other and with the progress in aviation is that being worked out by this club.

This will constitute the last call for applications for hangar space at the field. Application should be made in writing to Field Captain Horace B. Wild.

GROVER F. SEXTON, Secretary.

STRIKE TIES UP PLANS

Chicago, September 29.—Because some carpenters put up six pieces of steel strut to support the roofs of the new hangars going up at the flying field, a strike has been declared and all labor stopped, and the plans for renewed activity at the flying field have been delayed for another two weeks. When the business agent of the Ironworkers union learned that the wood workers had put up the steel he came out and stopped all work. The difficulty is over the payment of \$18.00, the cost of putting the steel up. Without this delay there would have been accessible six or nine steel and wood hangars by this time, and the waiting list of members desiring storage for their aeroplanes would have been materially reduced. With the advent of the new machines renewed activity is expected at the field, and the grounds are expected to take on something of their appearance during the middle of the summer when an excellent flying exhibition was given there every day. Thus far the club has not issued a pilot license, but several are expected to be developed when the hangars are completed.

All the field space of 184 acres has now been mowed and again looks like a lawn with no high grass to interfere with proper action.

ANOTHER ORIGINAL MONOPLANE

Chicago, September 25.—Franklin P. Smith has set up his new monoplane which is a material departure from standard types. Its peculiar features are its low aspect ratio, its low center of gravity and its all-steel construction.

Its length over all is 29 feet, the fuselage being three feet square. All steel tubing which rises within a foot of the ground. At the front end of the fuselage is established the six cylinder Radial engine, of Mr. Smith's own manufacture, driving an S'6 propeller of medium pitch. The operator sits behind the engine. The wing, which is 22 feet by 10 feet, is mounted four feet above the top of the fuselage with steel tubing. The outer corners are not restricted as to movement, and although they appear to flop considerably while running over the ground, Smith expects them to neutralize the effect of lateral oscillation automatically. He uses a rudder and an elevator at the rear of the fuselage, but uses no ailerons, expecting the loose warp of the wings to take their place.

There are many interesting details on Smith's machine which will be illustrated in these columns later.

FIELD READY FOR RODGERS

Chicago, September 29.—On the advice from F. L. Laughlin of Armour & Co., that Cal P. Rodgers, the Hearst Transcontinental flier was expected to arrive in Chicago tomorrow, Field Captain Horace B. Wild got ready today to provide the long distance flier with accommodations at *The Aero Club of Illinois* field. One of the conditions of the race is that the flier alight must in Chicago. Hence the arrangement had to be made whereby he could alight in Grant Park since the Cicero Flying Field is just outside the city limits.

Due to the necessity of sending in this dispatch early, to allow the printers to get out the anniversary number of AERO it was impossible to give further details this week of Rodgers' arrival.

APPLICATION FOR HANGARS

Chicago, September 30.—The following members of the club have applied for hangar space:

James B. Lund, Byron B. Barrows, Franklin P. Smith, Harry E. Mali, Dr. Edw. Spates, A. P. McArthur, Geo. Pedley, P. C. Davis, E. W. Hudson, John F. Sandell, Rolart Gordon, Claud Young, Elling O. Weeks, Donald Gregory, Dr. Kettles, Geo. F. Harding, Max Stupar.

Brief Notes of the Week

Captain Wm. Mattery is making his daily circuit of the field and has his plane new adjusted so that he is getting much better results than he formerly had.

The McCormick "Mustard Plaster" aeroplane met with an accident Wednesday when Maurey, who was running it over the ground to test the propeller thrust in movement turned it broadside to the wind. A sudden gust caused it to tip over on the right front corner breaking the propeller and part of the plane. It now is being shortened by about twelve feet.

Extensive alterations are being made on the McCormick-Romme umbrella plane. The engine and propeller are being placed in front and the shape of the surfaces is being brought back to the original patent specifications.

Dr. Spates brought the machine damaged by Vandie Ludvick at Varoqua, Wis, last week to the field and tuned it up Thursday, tried it out in a pouring rain, at which it also was dismantled and shipped away to fill more dates.

Walter Runcie has been running his Bleriot-type over the ground, but the rear skid being unsatisfactory for slow speeds, coupled with the lack of strong springs on the chassis and insufficient thrust from the old Curtiss four-cylinder motor, he has not attempted any air work with it.

Erodie has repaired his Gnome-Farman after a smash at Independence, Iowa, and is again on the road.

In these columns last week it was reported that Ignace Seminouk had been killed in Iowa while flying a Chicago aeroplane. This was an error. The man killed was Louis Rosenbaum, and not the Russian aviator who fortunately is very much alive, and now in New York.

L. ROSENBAUM IS KILLED

De Witt, Ia., September 19.—Louis Rosenbaum, flying for the International Aeroplane Manufacturing Company, of Chicago, was killed here this afternoon when he overestimated his angle of descent and allowed the machine to get too much headway to stop it before reaching the ground. Rosenbaum had given a beautiful exhibition all through his 22-minute flight and it seemed that he knew the flyer perfectly. But he sought to end the flight in a series of spectacular dips. Starting at a height of 300 feet he dove twice and each time straightened the machine out beautifully. But on the third dive he brought the flyer's head too low and before the elevator could take effect the machine struck the ground. The engine fell on Rosenbaum. This was the first serious accident in an International Curtiss-type plane.

Edward Flannery, of Hillery, Ill., has invented a new type machine. He has a model of it which has not been tested in flight.

CURTISS

ON LAND THE CURTISS BIPLANE

THE RECORD

NIGHT LETTER
THE WESTERN UNION TELEGRAPH COMPANY
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CURTISS EXHIBITION CO.,
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MOTOR HAS RUN AT LEAST ONE HUNDRED HOURS SINCE FEBRUARY FIFTEENTH
 WITHOUT BREAKAGE OR STOPPING IN THE AIR. OLD PLANE HAS HAD ABOUT TWO
 HUNDRED DOLLARS WORTH OF REPAIRS DUE MOSTLY TO ROUGH AND SMALL GROUNDS.
 PLANE I AM USING NOW NO REPAIRS.

1208 P.
 LINCOLN BEACHEY.

X-31 Ba

CURTISS AEROP

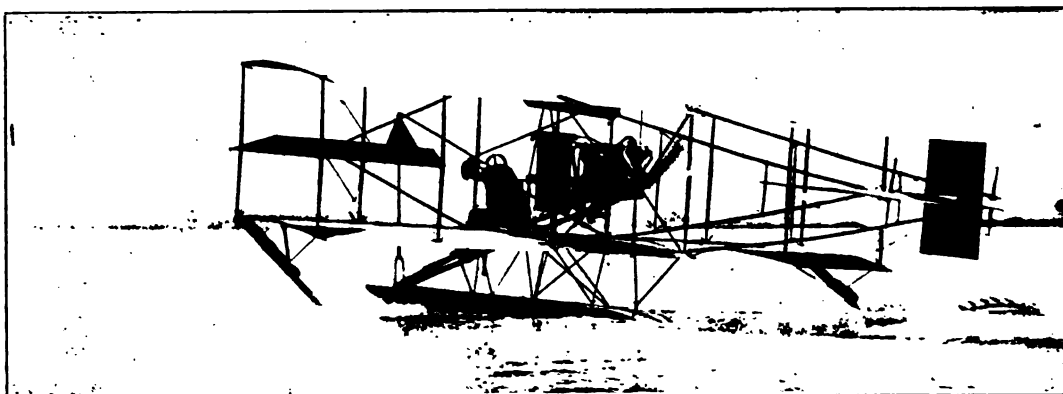
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THE RECORD

DAY LETTER

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THEO. W. VAIL, PRESIDENT BELVIDERE BROOKS, GENERAL MANAGER

RECEIVED AT J 78 A JG OV 116 COLLECT Day Letter.

St. Louis, Mo., 9/26/11

Curtis Exhibition Co.,
1737 Broadway, New York.

Regarding the Curtis Sixty horse power Engine I am now using will say that it is running perfectly notwithstanding the fact that at Astoria, Oregon, it was entirely submerged in salt water for over six hours:- We simply drained out the water and injected plenty of oil and shipped to next date where I found the motor ran perfectly and without any tinkering whatever:- Magnetos was not even taken apart and Motor is now pulling stronger than ever:- Expect to use this same motor in my flight from Minneapolis to New Orleans:- The motor I recently sent in for overhauling was used by me by continuously for over six months and never failed to deliver 40e goods.

Hugh Robinson.

LANE COMPANY
JEROME FANCIULLI, SALES MGR.
- - 1737 BROADWAY, NEW YORK, N. Y.

AERO MART

These Notices Bring Results

ALL WANTS 1c A WORD FOR SALE and FINANCIAL, ETC. 2c A WORD

PAYABLE STRICTLY IN ADVANCE

BOX NUMBERS

If desired, replies may be received at the offices of the Aero Publication Company. Advertisers wishing to take advantage of this convenience will pay 10 cents extra for registration, to cover the cost of forwarding replies.

SITUATIONS WANTED.

ASSISTANT—Young man would like position with aviator or manufacturer to work with a chance to take up flying. Three years on gas engines, testing and assembling. References. But. Hill, 114 State St., Providence, R. I.

ASSISTANT—Young man, 22, would like a situation with an aviator, mechanical experience. Ambitious, great enthusiast. Best references. Willing to go anywhere, with a small salary to start. Box 138, care Aero, St. Louis, Mo.

ASSISTANT—Young man desires position with firm or as aviator's assistant with prospect of becoming aviator. I have the nerve to stay with it. Best references furnished. Address E. R. Childress, aeroplane model builder, Bells, Tex.

ASSISTANT—Young man, age 18, desires position as an aviator's assistant with prospects for learning to fly. Address Louis Fenouillet, 132 West 47th St., New York, N. Y.

AVIATOR—Young man, 20, anxious to become aviator. Technical high school graduate. Short machine shop and gas engine experience. Address Box 132, care Aero, St. Louis.

AVIATOR—Manufacturers schools and clubs. Can you use a young man of unusual ability and nerve? Will enter into any fair agreement that will land me in the field as an aviator. This advertisement should appeal to the company that needs a young red-blooded American for demonstration, exhibition, and contest flights. Age, 22, weight 150. Well educated. Excellent references. Just the chap you are looking for. Will go anywhere in the United States for interview, at own expense. Let's get together. Don Rand, 92 Perkins St., Somerville, Mass.

AVIATOR—Experienced biplane operator. Handles either Curtiss or Wright machines. Open for flying position. L. A. L., care Aero.

DESIGNER—Aeroplane designer and superintendent of construction, at present employed by large aeroplane company in that capacity, is open to receive a proposition leading to his employment in a similar position. I am in a position to furnish designs, drawings, etc., and superintend the construction of Bleriot monoplanes and Farman biplanes, equipped with American water-cooled motors, which will fly without any experimenting. I can deliver the goods. If you want to manufacture instead of experimenting, address PRACTICAL, care of AERO, St. Louis.

INSTRUCTION.

DYKE'S GASOLINE ENGINE INSTRUCTION—Tells you all about engines, ignition, magnetos, every aviator ought to know. We also have working models of engines; learn to set valves, time ignition, etc. Write today for catalogue. It's interesting in itself. Absolutely free. A. L. Dyke, Publisher, Box 20, Roe Bldg., St. Louis, Mo.

LEARN to fly in two weeks. Students operating biplanes alone the first day; flying daily, weather permitting. Competent instructors in attendance. Aeroplane construction; also care and motor knowledge free. No bond required for breakage, terms very reasonable; write for terms. Aviators and aeroplanes supplied for exhibitions. Francaise Americaine Co., Mineola, L. I., N. Y.

MISCELLANEOUS WANTS.

AEROPLANE—Wanted—To communicate with owner of well constructed aeroplane, Curtiss type preferred; will furnish Roberts motor for same. John C. Kirby, 1818 Milan St., Houston, Tex.

MOEDEBECK HANDBOOK—Wanted a copy of Moedebeck's Handbook. Will pay \$2 for second-hand copy in good condition. Box 200, care Aero, St. Louis.

BLERIOT MONOPLANE WANTED—Will pay about \$1,000 for complete machine. Send all particulars in first letter. Address Box 133, care Aero.

MOTOR—Wanted—American-British aeroplane motor, 25-30 horsepower. State price and conditions. O. Bitchman, Box 1337, Havana, Cuba.

MISCELLANEOUS—I have added to my extensive establishment, embracing hydrogen free-balloons, captive and dirigible, an aviation section for construction, operation and instruction. I wish to buy, sell, or exchange anything pertaining to the art, new, used or second-hand. Please mail information, circulars, prospectus or price lists to Carl E. Myers, Balloon Farm, Frankfort, N. Y.

SITUATIONS VACANT.

AVIATOR—Wanted—for Curtiss type biplane. State experience and per cent expected of our receipts which are \$1,000 for three days. DeChenne Motor & Aeroplane Co., Monett, Mo.

MANAGER—Young woman, 18, about to learn to fly biplane, desires manager with some capital. Have driven motor cars, 100,000 miles cross-country and am expert mechanic. Reference given and required. Address Box 137, care Aero, St. Louis.

FOR SALE.

AIRCRAFT SUPPLIES—Aeroplanes for sale and built to order; propellers, models and model stock; Chicago engines; flying models. Chicago Aero Works, H. S. Renton, Prop. 164 N. Wabash Ave., Chicago, Ill.

AIRCRAFT SUPPLIES—Aeroplanes for sale and built to order. Submit your designs and get our prices before going further. Propellers, wheels and fittings made to order. The Eaton Brothers Factory, 1708 Echo Park Ave., Los Angeles, Cal.

BIPLANE—Curtiss aeroplane; new; perfect; with 50-horsepower water-cooled engine; complete outfit. Demonstration. Bargain for cash. Address Box 134, care Aero.

BLERIOT-TYPE—For sale, an exceptionally well made Bleriot-type monoplane, \$800; with Roberts motor \$2,000. Worth \$3,000. Will teach purchaser to operate free. Will save you 20 per cent on any standard aeroplane and guarantee highest class fittings and workmanship. Flight demonstrations with each machine before delivery. Tulsa Aeroplane Co., Tulsa, Okla.

BOOK—VEHICLES OF THE AIR—Third edition, practically new, sell or exchange. James Geier, Troy, N. Y.

DEMOISELLE—For sale or exchange, steel frame Demoiselle. W. J. Morgan, 4528 Kennerly, St. Louis, Mo.

ENGINE—Two cylinder 22-30 horsepower Detroit aero engine, carbureter, magneto, and propeller. Also supplies and accessories. Bay City Aero Supply Co., Room 7, MacDonough Blvd., Oakland, Cal.

FOR SALE—Continued

ENGINE—Elbridge three-cylinder feather weight 30-40 horsepower motor complete, good as new. Price \$500. B. T. Epps, Athens, Ga.

FIELD GLASSES AND BINOCULARS—Everyone interested in aviation should have one. After scientific test I have selected two very powerful field glasses for my head-liner. Beachey can't fly too high for them. 1st—Lemaire field glass, black Morocco, high top, 12 lenses, very powerful; objective field 4 degrees; 70-foot field at 1,000 feet; length, closed, 5½ inches; weight 27 ounces. Sole leather case with shoulder strap. Price \$20.00 and express charges. 2d—Lemaire field or marine glass, black Morocco, high top, grand power, the best glass made; objective field 2 5-10 degrees, 44-foot field at 1,000 feet; length, closed, 7¼ inches; weight 34 ounces. Sole leather case with shoulder strap. Price \$22.50 and express charges. Terms: \$1.00 with order, balance C. O. D. with the privilege to examine and try out. Silas J. Conynne, 3508 McLean Ave., Chicago, Ill.

GNOME-FARMAN—Complete Farman-type machine. 50 horsepower Gnome motor with lots of extra parts. Guaranteed to fly and in perfect condition. Tools and accessories. Will sell separate. Box 130, Aero, St. Louis.

GNOME EXPERT—Gentleman requires situation as Gnome engine expert; thoroughly qualified. Salary required 20 pounds (\$100) per month and expenses. Detailed particulars from C. W. B., 52 Monmouth Rd., Bishopston, Bristol, England.

MAXIMOTOR—40-50 horsepower. Guaranteed by makers; 300 pounds thrust; almost new. Price \$500 cash. Wm. Kirkbridge, 1055 Woodward, Detroit, Mich.

MERKEL ENGINE—For sale—Merkel engine, 2½x3, with carburetor, coil and plug. Just the thing for glider. Weight about 40 lbs. \$15 takes it. M. E. Lipscomb, Jerseyville, Ill.

MOTOR—Gray Eagle motor for sale. Will guarantee to give 210 pounds flying thrust; weight 158 pounds; net equipment 23 pounds; Bosch magneto and Schebler carburetor. Used for demonstrating. Only \$350. Robert M. Roof, M. E., Muncie, Ind.

MOTOR—20-24 horsepower air-cooled Curtiss, propeller and carburetor. First check for \$125 takes outfit. Warren J. Bauman, Rock Haven, Pa.

MOTOR—A 1910, 8-cylinder, 45-h. p. Rausenberger aero motor, good as new, has been used on Curtiss-type biplane. A photo and references for the asking. Price, \$800 cash. Box 127, Aero, St. Louis.

POCKET AMMETERS—One thousand Guaranteed \$2.00 pocket ammeters for testing batteries. 25 cents post paid. Chamols leather case with each. Stamps taken. Automobile Repair Company, 521-523 West 144th St., New York.

PROPELLERS—One Paragon, one Expanding Pitch, slightly used. Will sell cheap. Address Hotel Walton, Cincinnati, Ohio.

PROPELLERS—Guaranteed perfect model aeroplane propellers 6 inches, 25 cents; additional inches, 5 cents; postpaid. Diehl Bros., Jackson and Rockwell Sts., Jackson, Mich.

PROPELLER—Best grade walnut propeller built by Chelsea Aero Co. 8 feet 6 inches diameter, 6 feet 6 inches pitch. In excellent condition. Used only for six hours testing engine thrust. Will accept any reasonable offer. For particulars A. V. Reyburn, Jr., 5305 Delmar Blvd., St. Louis, Mo.

SUPPLIES—One new 5-gallon gasoline tank, copper, \$7. Pair 20x2-inch wheels with 5-foot axle, \$18; 16x1½-inch tall wheel with fork, \$6. New Bleriot rudder, covered, \$8; 24 Curtiss struts, \$8; 30 post sockets, \$3. All in first-class condition. Herbert C. Doyle, 321 Lake Ave., Rochester, N. Y.

FINANCIAL.

AID—Young man age 26, graduate in dentistry, furnishing best of reference, wishes financial aid to become aviator. Will go in contract if desired to cover or repay all money advanced on me while training. I mean business. Box 139, care Aero, St. Louis, Mo.

PARTNER—Wanted—Partner with \$1,500 for one-half interest in exhibition aeroplane. Plenty of good contracts waiting. Willing to teach right party to operate; mechanic is preferred. H. A. De Vry, Tulsa, Okla.

PARTNER—Wanted—Partner to furnish engine and \$250 to complete monoplane for exhibition, also cross-country flights. References. Write for particulars. Address Box 500, care Aero, St. Louis.

MODELS AND MODEL SUPPLIES.

COMPLETE PLAN drawn to scale with full instructions for building the only Wright three-foot biplane model that positively flies; 25 cents post paid. Drawing and directions for three-foot model Bleriot monoplane, 15 cents. Stamp brings most complete, interesting and instructive catalogue published. Ideal Aeroplane and Supply Company, 84½ West Broadway, New York, N. Y.

PROPELLERS—Most efficient wooden model propellers, 6 cents per inch. Propeller blanks 2 cents per inch. Raymond Stone, 533 Union Ave., Patterson, N. J.

SUPPLIES—Propeller shaft for models. Steel shaft fitted with hook, nuts and bearings, only 10 cents. Latest model supply catalogue free. The McCutchen Aero Co., 2043 W. Tloga St., Philadelphia, Pa.

SUPPLIES—Drawings that the smallest boy can understand. 3-foot Bleriot or Antoinette with building instructions post paid 15 cents. 40-inch Curtiss as used by Lincoln Beachey, price 25 cents. Ball-bearing shafts, 30 cents. 2½-inch rubber-tired wheels, 30 cents. Send stamp for catalogue. Brooklyn Aeroplane Supply Co., 151 Seventh avenue, Brooklyn, N. Y.



1,002,897, September 12, 1911.—Nat Elmer Brown, Grand Haven, Mich. An aerial photographic apparatus comprising a support, a camera having a shutter, means connecting the camera and support for permitting rotary movement of the former on the latter, means for revolving the camera by a step-by-step movement, and mechanism for operating the shutter in timed relation to each movement of the camera.

1,002,908, September 12, 1911.—Orravill L. Dunton, North Adams, Mass. An airship embodying a pair of sustaining planes on each side of the machine, adapted to be deflected by the sustaining pressure, and mechanical operating connections between the planes on the same side of the machine, whereby deflection of one causes a deflection of the other in the opposite direction.

1,003,062, September 12, 1911.—Albert O. Paulson, Los Angeles, Cal. An airship comprising a pair of pivoted box-kite members fore and aft of each other, and suitably connected together, diamond-shaped or mounted so as to have an edge at the top and bottom, the lower corner of each member cut away, and said members operatively mounted so that the angle and direction of flight may be governed thereby.

1,003,411, September 19, 1911.—Haden Herbert Bales, Ashcroft, British Columbia, Can. An airship embodying a main frame, a battery of rocket cylinders depending therefrom, means for adjusting the position of the battery to regulate the direction of discharge of the rocket cylinders, and selective mechanism for firing any or all of the cylinders as desired.

1,003,459, September 19, 1911.—Leicester Bodine, Holland, Philadelphia, Pa. A flying machine including a main horizontal plane, a vertical plane adjacent each end of said horizontal plane, and means for swinging each of said vertical planes about a diagonal axis extending from one edge of said plane to a point in vertical alignment with the opposite edge of said plane.

1,003,530, September 19, 1911.—William Randolph Smith, Erda, Utah. A combined balancing and steering device for air-ships comprising a revolvably mounted upright tubular casing, supports therefor, a shaft slidably mounted in said casing, a combined balancing weight and rudder secured to the lower end of said shaft, a raising and lowering cable connected to said shaft, a guide pulley on the upper support to receive said cable whereby the same may be actuated to raise and lower said shaft and the weight and rudder and a handle adjustably secured to the casing between its supports and having a slot for the passage of said cable.

1,003,605, September 19, 1911.—Leicester B. Holland, Philadelphia, Pa. A flying machine including skids upon which said machine is adapted to land, running wheels, means for supporting said running wheels whereby the same may be moved from a point below to a point above the skids, means for positively holding the running wheels with parts thereof projecting below the skids, whereby the machine may be supported on said running wheels, and means for automatically moving the running wheels to a point above the skids when the machine is in flight.

1,003,687, September 19, 1911.—Ernst H. Andrae, Dallas, Texas. A flying machine embodying a frame, vertically disposed planes at opposite sides thereof, dihedral horizontally disposed planes extending outwardly from said vertical planes, said horizontal planes being mounted in the same horizontal plane, an adjustable support mounted at the rear of the upper portion of said frame and provided at opposite sides of the frame with horizontally disposed planes, and means for shifting said support in a vertical plane.

1,003,714, September 19, 1911.—Josiah W. Dolson, New York, N. Y. The combination with a flying machine, of a parachute, a lock for securing said parachute normally in a collapsed position, means for automatically erecting said parachute when said lock is released, means for automatically spreading said parachute when said lock is released, means for detachably connecting said parachute to said machine, and a take-off connection, for supporting an aviator, secured to said parachute.

1,003,721, September 19, 1911.—John William Dunne, London, England, assignor to Blair Atholl Aeroplane Syndicate, Limited, of same place. A flying machine having rearwardly extending inflectionless supporting surfaces the angle of incidence of which decreases algebraically in a direction from the center to the tips, as set forth.

1,003,756, September 19, 1911.—Leo Covington Kincannon, Seabright, Cal. A flying machine comprising a revolvable carrier, a vane revolvably supported on the carrier outwardly from the axis thereof, a driving mechanism to intermittently turn the vane on its axis as the carrier revolves, and a cushioning device through which the power of the driving mechanism is transmitted to the vane.

1,003,782, September 19, 1911.—Clemens Ostermai, Neukirchen, near Meissen, Germany. A flying machine comprising a funnel-shaped vertically disposed cylinder, a car suspended therefrom by means of rigid, vertical stays, a rigid parachute arranged about the cylinder, a rotatable shaft concentric with the cylinder, means for rotating the same, a propeller mounted on the shaft above the cylinder, a conical hood guided between the car and the cylinder so as to close the latter when the machine is supported on the parachute and so as to recede to admit air through the cylinder when the propeller is at work for raising the machine, and means for adjusting the balance of the machine.

1,003,851, September 19, 1911.—Peter Zampol and Charles Zampol, New York, N. Y. A flying machine embodying a frame, a main supporting plane disposed above said frame, side planes extending downwardly from said main plane, said side planes being inclined inwardly toward the top of the forward edge, a small supporting plane at the lower ends of said side planes, a motor disposed within said frame below said smaller supporting plane, and centrally thereof, and propellers disposed between said upper supporting plane and said lower supporting plane.

1,003,858, September 19, 1911.—Malcolm Grover Adams, Parsons, Kans. A flying machine including a rudder, a controlling surface free to move under wind pressure, and means for operating the rudder from said controlling surface, the said means being connected with the rudder and resiliently connected with said controlling surface.

1,003,885, September 19, 1911.—John Jacob Day, Montreal, Quebec, Canada. A flying machine embodying a frame, a motor centrally supported within said frame having its shaft extended vertically, a plurality of lifting vanes extending from said shaft, a bevel gear fixedly mounted on said shaft, a sleeve loosely mounted on said

shaft, a plurality of lifting vanes extending from said sleeve, a bevel gear fixedly mounted on the lower end of said sleeve, a pinion suitably supported and operatively connecting said bevel gears, a second motor, a plurality of vertical shafts journaled at the corners of said frame, a plurality of lifting vanes extending from said corner vertical shafts, a plurality of sleeves loosely mounted on said corner shafts, a plurality of lifting vanes extending from said corner sleeves, bevel gears fixedly mounted at the lower end of said corner shafts, bevel gears fixedly mounted at the lower end of said corner sleeves, a pinion operatively connecting said corner bevel gears, means for transmitting power to said corner pinions from said second motor, propelling mechanism, and planes supported from said frame.

1,003,958, September 19, 1911.—John H. C. Alexander, Berkeley, Cal., assignor to Alexander Fan & Propeller Company, a Corporation of California. A fan or propeller blade having its entire working surface generated by a line tangent to a cylindrical surface concentric with the axis, and parallel to a plane perpendicular to the axis, the line in sweeping the surface of the blade moving so that its point of tangency to the cylindrical surface describes approximately a helix of variable pitch.

CORRESPONDENCE

Does Not Deny Low-Powered Flights

To the Editor of Aero:

Referring to your reply to a correspondent, page 561, September 30, it seems that my letter was misunderstood. I merely wished to deny that a "queer-looking machine invented by me would shortly make its appearance at Nassau boulevard." The rest of the statement, while true, did not interest me. I was provoked that it should be stated that my machine would be at Nassau boulevard, when I had then no intention of taking or sending it there.

M. B. SELLERS.

L. Bleriot Is Very Much Alive

TO THE EDITOR OF AERO:

Will you kindly advise through your Correspondence column whether or not M. Louis Bleriot, the inventor of the monoplane which bears his name, has been killed? A friend of mine holds that such is the case, while I understand that Bleriot has withdrawn from active flying and is devoting his attention to the manufacture of machines. Your kindness in this matter will be greatly appreciated.

KENNETH B. WARNER.

Louis Bleriot has not been killed. He has not given up flying either and is continually working on and trying out new types of machines.

Wing Warping a Bleriot Feature

TO THE EDITOR OF AERO:

I would like to know whether or not the front wings of a Bleriot monoplane are moved in any way when the aeroplane is in flight. AERO has proved of greater use and interest to me, than any other papers and books I have read on aeroplanes.

SILVIS MINOLI.

The wings of the Bleriot are warped to maintain lateral stability in flight.

Model Record Is 2,535 Feet

TO THE EDITOR OF AERO:

I notice in your issue of twenty-sixth of August what appears to be a world's record flight for a model aeroplane, viz. 1,691 feet.

I should like the readers of your paper to know that the world's record distance and duration of 2,535 feet in 82 seconds is held by R. F. Mann, an English school boy, with a model of his own design and construction. Master Mann has held the record for close on twelve months now with a distance of 2,000 feet in 74 seconds. He recently increased this to the afore mentioned figures.

I am Canadian agent for Mann's monoplanes and hereby challenge Mr. Cecil Peali to a competition to determine if his machine does hold the world's record.

Perhaps he will suggest some arrangement whereby these models can be pitted against one another?

GEO. MACWILLIAMS.

Directory of Aviators

Fair Secretaries Use AERO When Advertising Exhibitions

I want to compliment you on AERO. It has been of considerable value to me during the last few months in arranging for our meeting.—JOHN T. STINSON, Secretary Missouri State Fair, Sedalia, Mo.

I find the Aviators' Directory of value when planning exhibitions. No person interested in aviation can afford to be without AERO.—A. G. RIGBY, Secretary Buchanan County Fair and Racing Association, Independence, Iowa.

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DYOTT'S DEPERDUSSIN DESCRIBED

(Continued from page 14)

ing. They are operated through cranks, the wires to which pass through slits in the tail plane. The framework of the rudder, tail plane and tail flaps is entirely built up of very light steel tubes, brazed together, and entirely surrounded by a tightly stretched envelope of fabric.

The landing chassis, which is an extremely neat piece of work, in common with several others on this year's monoplanes, consists of a pair of wheels and a single central skid, the latter being supported by V-formed ash struts from the lower longitudinal members of the fuselage, and is of light steel tubing of comparatively large diameter. The suspension of the wheels is extremely simple, the axle on which they are mounted being a single long laminated steel spring, bound with cord at each side to give it greater rigidity.

The single control lever is articulated to a hinged shaft slung in vertical bearings. A side-to-side movement of the lever rotates the shaft, which has mounted upon it a block of wood, and to the top of this last the ends of the cables passing to the vertical rudder at the back are connected. A forward and backward motion of the vertical lever on its own pivots operates the elevator flaps in the tail by means of wires which pass under pulleys housed in the wooden block before mentioned, a direct return pull being effected by carrying return wires through a further pair of pulleys at the front end of the horizontal shaft. The warping of the wings is effected by a pedal.

A very good point in connection with the Nieuport control gear is that all the moving parts are made of brass, so that their operation can have no effect whatever upon a compass when such an instrument is used for steering. The arrangement of the control gear is also commendable, as all the wires are well out of the pilot's way.

One of the most characteristic points of the Nieuport machine is the method of supporting the engine from the front of the fuselage. The longitudinal members in front are extended beyond the covered-in part, and are connected together by a circular steel bracket, behind which the motor is fixed.

GILL TACKLES HIGH WIND IN DAKOTA

Wahpeton, N. D., September 29.—The star attraction of the Richland County Fair, held here for four days, ending to-day, was the Wright driven by Howard Gill. It was received with the greatest of enthusiasm, as no flight had ever been given in this neighborhood before.

On opening day there was a rain storm in the morning that left a good thirty mile an hour wind blowing all afternoon but in spite of the wind Gill made an ascension a little after four. Heading into the wind the machine rose rapidly upward till it reached an altitude of a 1,000 feet, where it remained stationary. In all Gill was in the air 12 minutes, during all of which time, excepting a half-circle turn to make his landing he was headed in the same direction without advancing more than a quarter of a mile from the starting point. On landing Gill said it would have been impossible to have flown in as much wind except for character of the surrounding country, which was perfectly level for hundreds of miles and without trees or buildings to stir the air up.

Gill continued his flights through the four days of the fair finishing on the last day, Friday, with a five-mile race against an automobile which he won by a slight margin.

TARBOX STABILIZER TRIED ON BIPLANE

By J. W. MITCHELL

Washington, D. C., September 30.—Formal trial was made at College Park yesterday afternoon of the automatic stability device that John P. Tarbox of Georgetown, N. C., has been assembling on a Shneider biplane for five weeks past. Tarbox did not send up a novice with the machine, but employed Joe Reichter, a professional aviator.

The device worked without interfering with the operation of the machine. It is thrown into and out of action by a foot-lever so that manual control can be substituted for the mechanical at any time. Attached to the foot lever was a small flag so that those on the ground could see when the stabilizer was being used and when it was not. There was no apparent difference in the travel of the machine with and without the device.

It is difficult to make the action of the stabilizer clear by a description. In general terms it may be said to depend on the vertical

habit of the pendulum. The pendulum is not heavy enough to operate the ailerons itself, being only about three-fourths of a pound in weight. The pendulum rod is hung in the middle on a small bearing so that there is as much rod above the bearing as there is from the bearing to the weight at the lower end. The upper end of the pendulum is counterweighted and besides works in a mercury bath to permit oscillation.

The function of the pendulum when the aeroplane is slanted is merely to throw into action the small relay that engages the part of the mechanism operating the ailerons. The power for the device is taken from the motor and the inventor says absorbs only a one-tenth of a horsepower. The working of the device is simple. In the centre is a screw of very fine thread like the moving needle screw of an old fashioned phonograph. This, through a worm gear, engages the drums over which run the controlling wires from the ailerons. When the mechanism is set to work by the pendulum, the drums revolve and flex the ailerons. When these bring the machine back to an even keel the movement stops because when the pendulum is vertical it is out of gear. If the movement of the ailerons has tilted the machine too far in the other direction, the pendulum again comes into play and the cant is corrected from the other side. The whole device weighs 23 pounds. Richter says that its operation is satisfactory.

The stabilizer has not yet been officially displayed to the War Department, buy General Allen says when it is it will be given consideration.

DATES AHEAD

St. Louis, Mo., October 22 to 30, meet or exhibition.

St. Louis, Mo., October 1-8, public competitive exhibition.

St. Louis, Mo., Mississippi river, October 7, Hugh Robinson, Curtiss hydroaeroplane.

Spokane, Wash., October 2-8, R. C. St. Henry.

Wibau, Mont., October 10, R. C. St. Henry.

Valley City, N. D., October 12, R. C. St. Henry.

Kansas City, Mo., October 5, Gordon Bennett Balloon Race.

Minneapolis, Minn., October 11, Hugh Robinson starts for New Orleans.

Chillicothe, Mo., October 11, 12, 13, 14, Benoist Aviators.
8, Pioneer Aviators, Benoist Aviators, J. D. Cooper, Hillery Beachey.

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FOREIGN NOTES

During the week of September 9, which preceded the French military maneuvers at Vesoul, cross-country flying became a common sport among the military fliers. Lieutenants Ludmann, Migaud, Beralda and Gourlez flew over from Douai, making one stop en route at Chalons. From Chalons came Lieutenants Malherbe, Blard, Duconneau and Capt. De Goys. Capt. Felix flew to Vesoul from Etampes and Capt. Casse made the trip from Toul.

An invisible airship is the idea of an English inventor. It is to be a dirigible coated with a chromium alloy which will take a high polish. This polish will be preserved by a special varnish, making the aerostat a veritable mirror capable of reflecting its environment. In order to prevent the underside from reflecting the earth and thus becoming visible to

all below, the car is provided with an ingenious arrangement of mirror-like surfaces which reflect only the shades of the upper air, causing the ship to appear the same color as the sky. It is claimed that at 1,500 feet the ship will barely be seen and that it will be invisible at 3,000 feet.

The latest British war dirigible was wrecked during an attempt to try it out on September 24 at Barrow-in-Furness. The big ship broke in two as it was being floated out of its water hangar, a nine-mile breeze sufficing to swing the rear end around as it came from the hangar, straining the fabric so that the gas leaked out. The ship was built by Vickers Sons and Maxim at a cost of more than \$400,000. The accident, it is said, shows the impracticability of a long non-rigid balloon. The envelope was 512 feet in length and the break occurring in the center shows the weakness of this construction.

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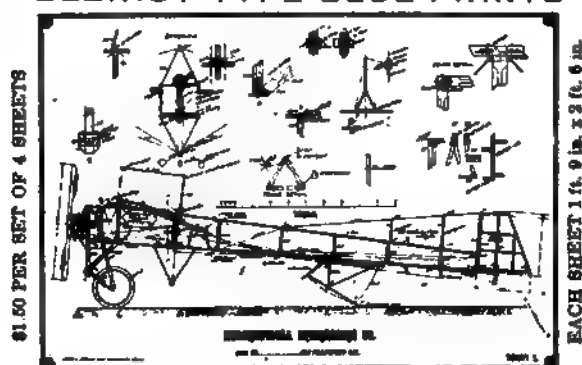
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TELEGRAM, January 24th, 1911

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WALTER R. SOLLITT

President, Franco-American Aviation Company

TELEGRAM

"Last special propeller acts perfectly in flight; please make two duplicates at once, using same measurements and materials; am thoroughly satisfied and hope the next will be as good. It flies my Farman machine perfectly. I want the others just like it in every respect."

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"We are very much pleased with the Paragon Propeller we have been using. The thrust was so great that it broke our 300-pound scales at the first pull."

McCURDY-WILLARD AEROPLANE CO.

New York City

TELEGRAM, July 23d, 1911

"Rush three propellers same size as last you sent. Rush these and will order more later"

TELEGRAM, August 22d, 1911

"Send three seven-foot-seven propellers, New York address as soon as possible."

Using a Paragon Propeller Mr. Glenn H. Curtis won the greatest speed contest at Los Angeles in 1910, defeating Radley (Bleriot), Ely (Curtiss), Parmelee (Wright), and Latham (Antoinette).

The most successful Aviators in America use and recommend Paragon Propellers

AMERICAN PROPELLER COMPANY

616 G Street, N. W., Washington, D. C.

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"I want to let you know what the last propeller you made for me has done on my Farman Gnome. On August 3d I had three passengers and myself, making a total load of 699 lbs. A 25 mi. an hr wind was blowing and I was advised against flying, but I took this load headed with the wind (which was puffy) and flew one-half mile at a height of 10 to 20 ft, and only landed because this was the limit of my straightaway."

A. M. WILLIAMS, Douglas, Arizona

"In regard to the propeller you made for me, I mounted it on my machine, Elbridge four. Took the thrust and speed of the engine accurate; 940 r. p. m. 300 lbs. I flew at first attempt. Rush me another, same pitch and diameter"

ROY C. BURGESS

"Kindly ship at once a 6½ ft. propeller. I believe your propeller the best that money can buy, as we have tried out a good many of them."

GLENN H. CURTISS

TELEGRAM

"Propellers developed as follows: No. 2 (7x5.75) 340 lbs. at 1200 r. p. m.; No. 3 (7x5.20) 350 lbs. at 1190 r. p. m. Ship seven-eighths by seven pitch to Belmont Park for Gordon-Bennett racer"

ROLAND B. MIDDLETON (Curtiss Aviator)

"Regarding the seven-foot Paragon Propeller you furnished for the four-cylinder Curtiss Aeroplane that I am flying, I beg to say that upon the first trial the thrust was so great as to require two additional men to hold the machine, and in flight it seemed that the propeller had doubled the power of the engine. The machine climbed like going up stairs. I consider it a very remarkable propeller."

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"Altogether we have had ten propellers of other make, some of which are quite freakish, no two measuring up the same or developing the same thrust at the same engine speed. We got only 230 lbs. thrust with the best, the rest all running down to 180 lbs."

"The seven-foot nine-inch Paragon Propeller which you furnished us is giving entire satisfaction. At nine hundred fifty turns we received three hundred pounds thrust with Elbridge 40-60 Aero special. On May 9th, Thompson made his first cross-country flight of twenty-two miles, using a Paragon."

REX SMITH AEROPLANE COMPANY

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"These propellers are very efficient and seem to keep up their thrust at all speeds in the air. Please send me two more of the nine-foot size at College Park. I expect to give you a further order for six additional propellers in a short time."

ROBERTS MOTOR COMPANY, Sandusky, Ohio

TELEGRAM

"The eight-foot Paragon propeller with the five-foot pitch gave a thrust of four hundred pounds on our forty horsepower motor running at only nine hundred revolutions per minute. We consider this a remarkable showing."

"We can buy propellers of — and several other makers at much lower prices, but we want the very best thing there is. After once seeing your oak and spruce construction the customer will take no other."

C. V. CESSNA, Cherokee, Oklahoma

"Your propeller a dandy. Ship us another just like it."

WILLIE HAUPST

"I wish to congratulate you on the construction of your propellers. In landing the wheel broke and the propeller went into the ground three inches without damaging it any."

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PROPELLERS FOR WRIGHT FLYERS

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Vol. III No. 2
October 14, 1911

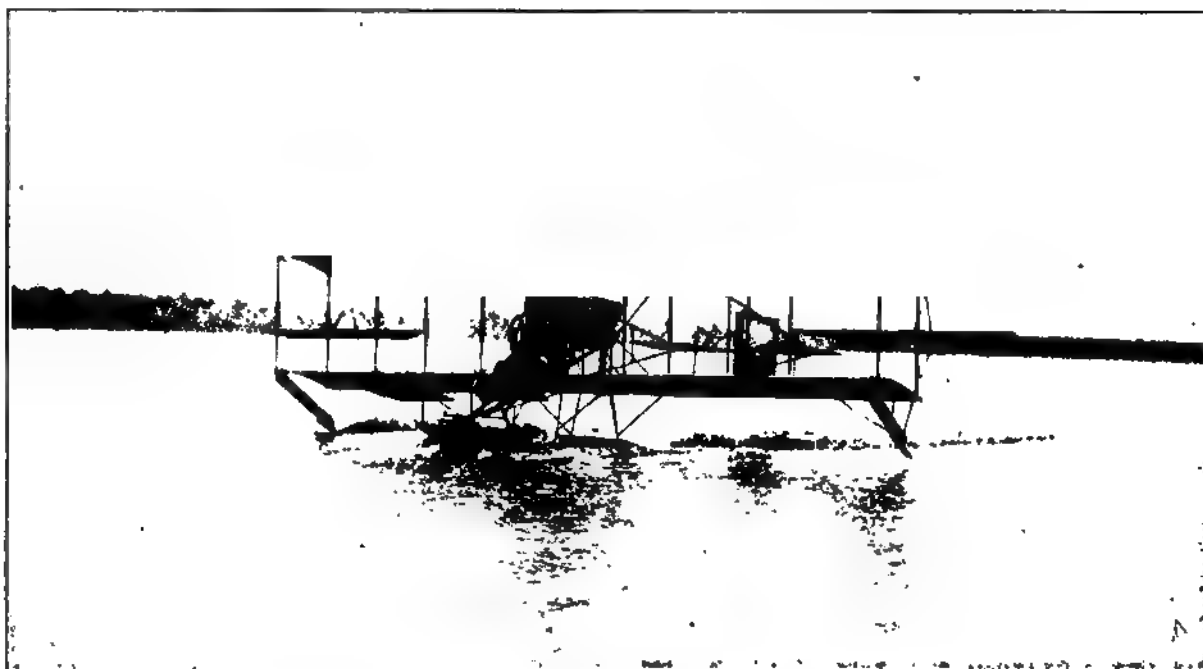
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Edited by E. PERCY NOEL

ROBINSON READY FOR TRANS-MISSISSIPPI FLIGHT

St. Louis, October 10.—Hugh Robinson left St. Louis last night for Minneapolis where on Friday, October 13, he will commence his long journey by hydroaeroplane to New Orleans, following the course of the Mississippi. He will give an exhibition of flying over Lake Calhoun, Minneapolis, October 11, the day originally set for the start and will fly with a land machine at La Crosse, Wis., October 12.

It is said that he asked to have the river flight start on Friday, because he was born on Friday the thirteenth. When he went to the train yesterday he found it waiting on track No. 13 and considered that a good omen. He carries No. 13 on the radiator of his machine.

Robinson expects to arrive in St. Louis on his way to New Orleans, about October 22. He hopes to fly 122 miles the first day. Of this distance the first 35 will be the most hazardous of the trip, as he will have scarcely any safe landing spot beneath him on the stretch from

Lake Calhoun, over the residence district of Minneapolis, to the Mississippi.

He will carry with him on his hydro, a valise containing a change of clothing, a kit of tools, an extra gallon of gasoline and one of lubricating oil, and rations. He will be able to alight on the water, adjust his motor or use his emergency oil or gasoline without going to shore. The regular gasoline tank on his machine will hold from 25 to 30 gallons.

There are a number of cities along the way that have not subscribed to the fund to make a purse for the aviator for the flight and these will be passed by quickly. The towns that have subscribed to date are: Minneapolis, Hastings, Wyona, Red Wing, Wabasha, Minn.; La Crosse and Prairie du Chien, Wis.; Bellevue, Clinton, Burlington, Keokuk, Ia.; Rock Island, Ill.; Canton, Hannibal and

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PILOT'S CERTIFICATE OF AVIATOR WHO WILL TRY LONG FLIGHT.

New Madrid, Mo.; Cairo, Ill.; Memphis, Tenn.; Jackson, Miss.

The purse will not be as large as expected unless the other cities on the way become enthusiastic as Robinson progresses and become anxious to have him not slight them on his way. The trans-Mississippi Valley Flight Association believes it probable that they will.

The operating end of the flight will be in the hands of R. H. Young, of the Curtiss forces. He will have charge of the three mechanics who will be stationed along the route in relays each day of flying. An extra machine will be kept in St. Louis ready for shipment and extra pontoons will be salted along the route for use in emergency. In order to fulfill his agreement with Jackson, Miss., Robinson will have to arrive there not later than November 2.

The aviator is enthusiastic about the trip and anxious to be started. "I think there will not be the slightest difficulty after the first 35 miles," he said to AERO before leaving yesterday afternoon. "In case the motor goes wrong or if anything else happens I will simply land on the water and float down with the current to a convenient place to land. I am anxious to make the trip as quickly as possible, barring necessary delays at some of the points on the route where we will do a little flying."

The southern district where little money has been raised, is at present in the hands of Thomas Walsh, Spearman Lewis of the trans-Mississippi Flight Association being in charge of the office in St. Louis, which acts as a clearing house for the cities subscribing to the aviator's purse.

COFFYN TESTS HYDROPLANED WRIGHT

By FRANK COFFYN

Detroit, Mich., October 3.—Russell and Fred Alger of Detroit, who are both keenly interested in aviation and are owners of a standard B Wright machine, recently communicated with J. W. Hacker, the well known designer of the fast hydroplane motor boats at Kitty Hawk and Gretchen II, to design hydroplanes suitable for their Wright machine so that they might fly from the surface of Lake St. Clare near which they have their hangar and flying field.

To show you how successful Hacker was in his efforts with what little assistance and suggestions I could give him we attached the two hydroplane pontoons, weighing 40 pounds apiece, to the bottom of the skids, having previously detached the four starting wheels and placed the machine in the water. Much to our delight, we found we had struck the exact point of balance fore and aft. The machine took its normal position as it does on the ground. I then climbed into my seat and my mechanics started the motor, the speed of which gradually increased. After a very short run upon the water facing into an 18-mile wind, with the surface none too smooth, I could feel that I had ample speed, so elevated my up and down control. I got into the air with great ease, flew down the shore for about a mile, turned out over the lake for some distance, came back about where we had left the water and alighted upon its surface without the least bit of trouble and without shutting off my engine.

I repeated the same program again, making about two 10-minute flights. I think the occurrence unusually interesting because of the fact that it worked so well on absolutely the first attempt, when it was generally supposed that owing to the low power plant in the Wright machine, in proportion to its weight it would be a difficult matter to overcome the initial resistance of the water.

ROUGH WEATHER HINDERS NASSAU FLYING

Nassau Boulevard, Long Island, October 9.—With the exception of one day—Friday—the flying conditions this week on Long Island have been anything but ideal. When it hasn't been blowing hard from the north it has been blowing a gale off the Atlantic to the south. There has also been a lot of rain.

The flying week opened miserably on Monday. It rained most of the day, much to the inconvenience of those aviators who had been taking part in the international meet who wanted to pack up and get away. Nobody ventured up during the day. The weather conditions were a little better on Tuesday. There was a fairly stiff northwest wind in the afternoon, but, nevertheless, six aviators went up. Earle L. Ovington, who has received the appointment from Washington of First Aerial Postman tried out the Indian-Queen Monoplane with which he intends to attempt to fly from New York to Los Angeles. The two recent graduates of the Wright school—Phillips W. Page and Clifford Webster made their first flights alone.

Both these aviators, who are connected with the Burgess Company and Curtis of Marblehead, Mass., were warmly congratulated on the success of their maiden trips. James V. Martin was out rolling his new Martin-type Queen aeroplane; Dyott made a number of circuits of the field in his passenger-carrying Deperdussin; and Lieutenant Arnold made a short cross-country jaunt in his Burgess-Wright. Page, Webster, Martin, Ovington and Lieutenant Arnold were also out making short flights on Wednesday. There was no flying on Thursday owing to the high wind.

Thirteen aeroplanes were out on Friday. The weather was perfect and everybody voted that it was the best day of the season. At no time did the wind blow at more than four miles an hour. The aviators who took out their machines were Dyott, Sopwith with his Bleriot, Grahame-White in his Baby biplane, William B. Cline in the Schneider headless biplane, Ovington in his Indian-Queen monoplane, Lieutenant Arnold in a Burgess-Wright, Miss Matilde Moisant in a Moisant monoplane, Page and Webster, Martin, Doctor Wildman in a McCurdy-Willard, Andre Houpert in a Moisant monoplane and St. Ives. Doctor Wildman came to grief by running into a hummock on the ground. St. Ives in his new monoplane contented himself with ground exercises. Page did the most flying this day, making 15 flights. His total time in the air was four hours, nine minutes.

CAVALRY FLAT BECOMING AERO FIELD

San Francisco, Cal., September 30.—Cavalry Flat, the Presidio of San Francisco, is fast assuming the proportions of an up-to-date flying field with hangars, repair shops and daily flights. Aviators have long had a standing invitation from the post commander to try out their machines on the military reservation and a number of them have at last availed themselves of the opportunity. The field is daily thronged with army officers and civilians, all deeply interested in the practice of the amateurs.

Frank Bryant, who operates a standard Curtiss biplane, has made a number of well sustained flights and has attempted to fly across the Golden Gate several times. Thus far he has failed of his purpose, but declares that he will yet land at the artillery post of Fort Baker across the channel.

Norman De Vaux, Pacific coast agent for the Curtiss Company, returned from New York yesterday and brought with him a new eight-cylinder machine which he had purchased.

C. C. Bradley is another who is making tryout flights at the Presidio. He has not attempted to do more than cut grass, but gives promise of becoming a good aviator.

P. T. Criblett has a biplane on the ground which he made himself. His propeller was broken in a mixup the other day and he has been compelled to suspend operations until a new one arrives.

E. N. Yearsley, flying a Curtiss type machine, equipped with a 40 horse power Elbridge engine, has moved his camp to the Presidio and will start experimenting in a few days.

C. E. Hagen, of San Francisco, is building a biplane of his own design which will be equipped with a 70 horse power motor also built by himself. The machine is headless with Farman landing device and Curtiss tail. Control is maintained entirely by the wheel, body control being omitted.

Lyman Gilmore who has invented and built an aeroplane and engine at Grass Valley, Cal., met with an accident on September 21, which destroyed his machine and slightly injured the aviator. The crankshaft broke when the engine was going at full speed and the flying debris wrecked the aeroplane, the engine being smashed in many pieces. A piece of steel struck Gilmore on the face making a wound.

COOK ATTEMPTS OVER-WATER FLIGHT

Black Diamond, Cal., September 20.—Weldon B. Cook the amateur aviator who is making flights in the Curtiss type biplane built by Lanteri and Maupin, made a flight of three miles in a little over four minutes at Black Diamond, on Tuesday, and would have attempted a flight to Antioch across the Straits of Carquenez if his engine had not developed some slight trouble which made his landing necessary. Cook started at five o'clock in the morning and early as the hour was there were 700 people assembled to see him off. He has announced that he will make the attempt again within the next few days.

**Official Result of the International Balloon Race
in Next Issue.**

WILLOUGHBY'S HYDROAEROPLANE DESCRIBED

New York, October 6.—Captain Hugh L. Willoughby, who built the famous War-Hawk, perhaps the largest biplane ever constructed, has now built a successful hydro-aeroplane which he calls the Pelican. Captain Willoughby, in New York for the Nassau Boulevard meet, has described his new biplane to Aero's correspondent.

The biplane measures across the wings 30 feet and weighs, without the wheels in use on land, (44 pounds) and the brass sheathed hydroplane (103 pounds,) 575 pounds. The propeller is in front.

The Pelican is covered by several patents, the most important of which protect the double rudders (with inverse and simultaneous action) for steering in the vertical plane, and the engine control. The Willoughby double rudders are now being used by Curtiss, Henry Farman and Howard Wright. The length of the ribs is five feet.

The Willoughby control is this: There is a wheel at the right hand as in the Antoinette for ascending or descending. The vertical

that moment they are satisfied that it is impossible to have a serious accident. I have seen a Pelican in South Florida soar for a couple of miles within six inches of the surface. If anything goes wrong the machine simply lights on the water as do the aquatic birds, and the aeroplane is converted into a motor boat, but can be steered (with the aerial rudder), in a way that no motor-boat can imitate, and in point of speed can beat the fastest motor-boat in the world, even if she has a \$10,000.00 engine.

"Drowning is impossible, as the displacement of the hydroplane floats will float over 200 lbs, and the watertight wings themselves another 1000 pounds. The motor boat can upset, and sink, but the

CAPTAIN WILLOUGHBY MOUNTING HIS HYDRO

rudder is moved from starboard to port as in a motor-boat; the ailerons are operated by the Curtiss shoulder brass. The engine is controlled with a pedal for the right foot.

This pedal acts just the opposite to an accelerator on an automobile, a heavy spring keeps it in opposition—full speed ahead—with the foot off. A gentle pressure downward gradually closes the throttle. When within a quarter of an inch of the total distance it can go; the throttle is completely closed. Another push cuts off the spark. This push is locked by a device which can be used by either hand. This lock can be released in the air while volplanning or on the ground while cranking. This is really a safety device, for it prevents any possibility of the engine being accidentally restarted after the aeroplane has touched the ground. Lieutenant Kelly was killed at San Antonio, it is said, by his engine restarting after he had touched the ground.

Captain Willoughby has made several successful flights in his hydro-aeroplane at Newport, R. I., and is going to continue his experiments at his winter home at Sewall's Point, Fla.

Captain Willoughby issued the following statement, dated October 7:

"I have to-day received notice from the French Patent Office that my patent on the Double Rudders has been allowed. The full papers will now be ready in the American Patent Office in a couple of months. The patent on engine control will be issued about the same time.

"My success with the Pelican has been so great that it is my intention to establish a factory at Sewalls Point, Florida this winter and build duplicates of the Pelican, putting in the best 50 horse power engine that can be produced for the work, with the best workmanship, at the average price of a good automobile.

"We are all looking forward for a big demand from the general public for the hydro in the Spring. The moment people realize the fact that it is not necessary to fly more than a few feet from the surface of the water and in fact the best wind is near the water. From

THE PELICAN BEFORE STARTING

hydro-aeroplane cannot do so. In running the Pelican in Newport Harbor lately, I ran through the swell of a ferry boat that would have capsized a rowboat at once. The hydroplanes were submerged, but no water reached the body planes.

"There are thousands of people fond of sports, who would have taken up the aeroplane but for their own fears, or those of their relations. The most timid person will drive a hydro and get more pleasure out of it than he ever did from the automobile or the motor-boat. Touring in time with the hydro will become popular, following the same old water routes frequented by the motor boat and stopping for gasoline at the same old stations. An extra passenger or 100 pounds of luggage will be quite possible."

FLIES 11 HOURS WITHOUT A STOP

Paris, September 2.—George Fourny, chief pilot of the Maurice Farman factory, has risen in a short time to the position of an aviator of the highest rank. Beginning a series of remarkable flights August 8, he has done more and more until yesterday he broke all records for distance and duration without a stop, flying 457.1 miles or 720 kilometers in 11 hours, one minute and 29 seconds.

At 4:43 in the morning he ascended at Buc for an official test under Captain Etève, representing the Aero Club of France, assisted by M. Richard, official timer. He had selected for his performance a 10 kilometer circuit, to Fort Haut-Buc, Voisine-le-Bretonneux and Le Trou-Sale. He carried 116 gallons of gasoline and 13 gallons of oil.

At 8:21 Fourny had made 23 circuits of the course; at 11:51 he completed his forty-fifth circuit; at 2:45 p. m. he had made 65 laps. At 3:30 p. m. his distance amounted to 450.9 miles, but he continued his regular flying. Running short of gasoline, Fourny finally landed having made 457.1 miles in 11:01:29, which made him the recordman of the world for duration and distance without stop.

The biplane driven by Fourny is comparatively slow. It made a speed of only 40.9 miles an hour on September 1, but it carried during the test an enormous supply of gasoline for 12 hours travel without stop, and it went almost for 11 hours and a half. The machine was the Maurice Farman type of great width which will take part in the maneuvers of military aeroplanes in October. The upper plane measures 75 feet 7 inches instead of the usual 52 feet 5 inches, and the lower 53 feet 7 inches instead of 45 feet 11 inches. The carrying surface is more than 2,472 cubic feet instead of 2,154.

The machine is fitted with a 60 horse power Renault motor of the eight cylinder V type, cooled by forced air. This same motor made it possible for Tabuteau to win the Michelin cup in 1910 and for Renaux to win the Michelin prize for the Paris-Puy de Dome prize.

CROMWELL DIXON DIES OF INJURIES.

Spokane, Wash., October 2.—Within two days of the greatest triumph of his life, the crossing of the Rocky Mountains in an aeroplane, Cromwell Dixon, the young Curtiss aviator was killed today by a 100-foot fall to the railroad tracks near the interstate fair grounds, here. His machine was apparently flying perfectly when it suddenly tilted up and slid sideways to the ground. Several bones were broken and the aviator received internal injuries of which he died at 3:50 o'clock this afternoon. On Saturday, September 30 he made a great flight across the Rocky Mountains winning \$10,000.

structed the machine by himself. A good manager could have secured considerable good business by exhibiting with this machine. Finally after a season or two Cromwell became ambitious and against my advice, attached a gasoline motor, and after considerable practice was able to handle his machine very nicely.

In June, 1910, the Wright Company participated in an aviation meet at Montreal, Canada, with the Wright flyers. Cromwell was engaged with his dirigible balloon and gave a number of very fine exhibitions. While there he attached a new propeller to give him increased speed and on the first flight, using this equipment, he managed in some manner while close to the ground to leave his machine, which immediately ascended to high altitude and burst.

Cromwell was discouraged over his accident but became very ambitious to become an aviator. As we had no opening, of course we could not put him on; but he was given an opportunity while in Montreal to ride a Bleriot Monoplane equipped with an Anzani motor. Fortunately a flight of some thousand feet was made without injury to the audience or the boy. I immediately requested Mrs. Dixon, who was present, to not allow her son to get on an aeroplane again. Mrs. Dixon resented my advice, so I did not see them again during the season, and it was with regret that I learned that Cromwell was taking flying lessons. Knowing his ambitions and realizing that it would be useless to offer further advice, I waited the event which I felt sure was bound to occur.

Unfortunately this bright young boy has given up his life and all that the future held in store for him merely for an ambition, coupled with the salary which he expected to receive.

We are reading everyday of fatal accidents to men of all ages, but I believe that this is the first fatal accident to a boy, and I firmly believe that a law should be enacted, making it a crime to allow boys under age to give exhibitions with a flying machine. There are thousands of methods of making a good living without our forcing children to give exhibitions when there are men of experience who make it a business to do this class of work.

CROMWELL DIXON

Knabenshue Urged Dixon Not to Fly

BY ROY KNABENSHUE

On Labor Day, in 1905, I opened my season at Columbus, Ohio with my dirigible airship, and shortly after my opening flight I was introduced to Cromwell Dixon by his mother, who appeared on the scene. Mrs. Dixon was very anxious that I take an interest in her boy and teach him to become an aeronaut. At that time I had had very little experience and was more or less afraid of the proposition, as I considered it extremely hazardous to operate a gasoline motor under a balloon charged with hydrogen gas. Therefore, I strongly advised Mrs. Dixon to keep her son out of the business.

It appears that after I left Columbus a number of citizens became interested in the boy and the result was that on my next engagement the following year at the state fair, I found Cromwell located in a store, which had been rented for the purpose, exhibiting an airship which he had constructed himself. I was more or less concerned about the boy's safety and on this occasion strongly advised Mrs. Dixon to make no effort to put a gasoline motor under his balloon as I felt certain it would be the cause of an accident, if not his death. Seeing that she was quite determined on the point, I invited Cromwell to visit me at Toledo the following spring during my early experiments. Mrs. Dixon brought up her son and paid us the visit during which time I instructed him in how to build his apparatus, giving him such materials as I could spare.

Much against Cromwell's wishes, I persuaded his mother that he should not use an engine, and having seen an equipment of Carl Meyers which was operated by foot or pedal power, I strongly advised that this be used in his case, which was finally adopted.

He did very nicely with this apparatus, gaining considerable publicity on account of his youth and the fact that he had con-

MOURFIELD STARTLES LOUISIANA

New Orleans, La., October 6.—While the advent of a new aviator is but a passing event nowadays, Carl Mourfield, aged 21 years, a resident of Monroe, La., has made a distinct mark for himself in more ways than one. Three months ago he started to build a Curtiss type biplane, and to date he has made more than 40 flights, ranging from a few yards to an overland distance of 21 miles. Mourfield taught himself and he informed an AERO correspondent that he had no trouble after the first day of grass-cutting, when he ran over rough ground and broke a strut which collided with and smashed the propeller.

His first flight of consequence took place two weeks ago, when he flew from Sterlington to Ouachita City, 10 miles in 10 minutes. On September 30 he startled both country and city by another cross-country trip over swamps and bad ground. He covered 21 miles in 22 minutes, alighting safely in Forsythe Park, Monroe, where he was warmly received. On Sunday, October 1, he made two flights, remaining in the air six and three minutes on his first and second flights, respectively. The wind at the time was more than 15 miles per hour.

The Curtiss-type plane he uses was built by himself, with the help of George Zeiglin, who disposed of his business in order to furnish financial aid for the flier. Many months ago, in order to become familiar with the machine he intended building, Mourfield visited the Curtiss factory at Hammondsport, and also put in several weeks of work with Captain Thomas Baldwin at Mineola.

The plane is the old Curtiss-type, of the same general appearance as the machine which flew down the Hudson in 1910. A Kirkham 50-horsepower motor and a seven-foot propeller of six-foot pitch furnish the driving power. The machine is covered with Baldwin fabric. The builders have a new Curtiss-type all complete except for the covering, which will, in this case, be Goodyear fabric. They expect to have it in the air during the next few weeks, and it is expected that it will develop great speed. Zeiglin will learn to fly as soon as the new plane is in the field.

As far as can be seen, no local money will be forthcoming for the Robinson down-river flight.

J. A. D. McCurdy refused to fly at Hattiesburg, Miss., on October 3, giving as reasons, the heat and peculiar weather conditions.

MAIL-CARRYING WAS THE ST. LOUIS MEET FEATURE

St. Louis, Mo., October 8.—That an aerial mail service might be maintained was demonstrated in St. Louis, during the past week, when Walter Brookins took to the air on four days out of a scheduled five and carried mail over distances of from two to 14 miles. The service opened Wednesday, October 4, when he covered the 14 miles from Kinloch park to the Fairgrounds Park aviation field with two sacks of letters and post cards, weighing 65 pounds. It was continued on Thursday, Friday and Sunday with Brookins carrying one sack a day. As each 30-pound bag holds more than 3,900 pieces it is estimated that he carried nearly 20,000 pieces of mail on his four flights.

The flying was discontinued on Saturday because the narrow grounds and high wind made it impossible for him to fly without danger of wrecking his machine. On the three days preceding the wind was so strong as to almost prohibit flying and Brookins was the

yet learned to make long flights, but he was always ready throughout the week to keep the spectators interested by a series of jumps across the field.

The big surprise of the week came last night, too, when Kearny, discarded his crutches, made necessary by his fall at Kinloch some three months ago, and took a Benoist plane with Roberts motor out for three big circles about the grounds. It was the first time he had flown in three months and the plane he was in had never been used before so that the officials were near to nervous prostration before

BROOKINS STARTING FROM KINLOCH WITH THE MAIL

only man on the field who was allowed to go out by the committee of safety. On Sunday, although clouds hung over the field, there was no rain and practically no wind, so Brookins tried dropping the sack of mail on a designated spot on the ground, to give an illustration of how fast mails may be delivered in the near future.

A temporary post office was established on the field where letters and cards were postmarked and sorted, just as in one of the city branches. H. J. Maher was the postmaster in charge and he was assisted by carrier F. W. Hagemeyer, together with O. S. Mears, Arthur J. Thomas, Ely Lieberstein, and Emil Jacobson. A. T. Michener, superintendent of the St. Louis mails, also appeared on the field every day to watch the new service.

There were in all eight planes on the field during the week: two Wrights, driven by Brookins and George W. Beatty respectively, three Benoist planes, driven by J. A. Woodlief, C. W. Bleakely and H. F. Kearny, two Curtiss-types owned by M. A. Heimann and F. A. Pine and driven by Hillery Beachey and John D. Cooper respectively. G. W. Beatty was a late arrival at the meet, his machine appearing Sunday morning in response to an offer of \$5 a minute for a three hour flight, Sunday afternoon. His machine was set up hurriedly and instead of a three-hour flight he was up a mere two minutes before his engine suddenly died and made it necessary for him to make a hasty landing. He sprained his wrist and slightly damaged his machine.

Sunday, was the best of the meet, nine flights being made. This included two practice flights by Beatty which were made before the day's flying had officially begun. Brookins made four of the official flights, Beatty one, Andrew Drew one and Kearny one. Cooper worked with his Emerson engine all afternoon, from the starting bomb until dark, but it could not be made to hit regularly and he was compelled to give up all hope of flying in the meet.

W. H. Robinson also appeared on the field in a Farman-type biplane, purchased from Kuhno at Kinloch Park. Robinson has not

BROOKINS DELIVERING MAIL POUCH AFTER FLIGHT

the daring aviator came down. After his first wide circle, during which he proceeded far over the housetops to the west of the grounds, Lambert declared he had had enough.

"Call him down," he said, "he is too daring."

A bonfire was hurriedly made and loose powder was flashed off in it. According to a prearranged code this meant "Come down!" Kearny came low over the field and was apparently about to cut off his motor, when suddenly, as if to taunt the officials, he opened his throttle and made another circuit of the grounds.

"I could have done that all week if you'd have let me," he said after alighting.

The progress of the flying day by day was as follows:

WEDNESDAY.

Wednesday was a clear sunny day with a sharp wind. From 2:30 on, everyone at the field was anxiously inquiring if Brookins would attempt to carry the mail in from Kinloch. No news of the attempt could be obtained beyond the fact that a party in automobiles had left the down town post office with two sacks of letters for the flier. It was late in the afternoon while W. H. Robinson was amusing the crowd with short jumps, before the announcement came in by telephone that he was on his way, and some 15 minutes behind the news of his start came the flier himself, a small black speck just above the northwestern horizon.

It was only a short time until he was circling over the field. After two wide swoops he dove rapidly, cut off his motor and came to earth upon the eastern end of the field. The lead weighted strut which is usually placed on the outer forward edge of his plane when no passenger is aboard, was the center strut instead, in order to balance the 60 pounds of the mail sacks. The landing was made at 4:32, exactly 12 minutes after Brookins was first seen.

The next attempt to fly resulted in the only accident of the week. Hillery Beachey took out the M. A. Heimann Curtiss-type when he was not sure it was balanced. He had just bought a new Hall-Scott motor, and anxious to try it, he removed the Roberts engine, for which his plane was already balanced and had the new engine put in its place. Before going out he promised A. B. Lambert that he would only make a jump, but once his plane was well started, he threw his elevator back suddenly and climbed rapidly out of the grounds.

Continued on page 42.

Winnings of Aviators at Nassau Boulevard Meet

Compiled by Aero Club of America.				AMOUNT
AVIATOR	PRIZE	EVENT	DAY	
H. N. Atwood	First ½ Third	Second Second	First Second	\$300.00 50.00 \$350.00
Lieut. Arnold	Prize ½ Second Second	Sixth Second Third	Fifth Second Fifth	\$50.00 150.00 150.00 \$350.00
Capt. Beck	Second Third First Second Third	First Fourth First Third Fourth	Second Third Sixth Sixth Eighth	\$300.00 300.00 600.00 50.00 100.00 \$1150.00
G. W. Beatty	First Prize Second Second	First Sixth Extra Second	First First Second Third	\$600.00 50.00 150.00 150.00 \$950.00
Lieut. Ellyson	Prize First Third	Sixth Fourth Second	First Third Eighth	\$50.00 600.00 50.00 \$700.00
Eugene Ely	Prize First First ½ Second Second	Sixth Extra First Second Fourth	First Second Second Second Eighth	\$50.00 300.00 600.00 150.00 300.00 \$1400.00
G-White	Prize ½ First First First First First First First	Sixth Second Fifth First First Fourth Fourth First	First Second Second Third Fourth Fourth Sixth Eighth	\$50.00 300.00 600.00 600.00 600.00 600.00 600.00 600.00 \$3950.00
L. Hammond	½ Third Second Second	Second Fourth Third	Second Third Fourth	\$50.00 300.00 150.00 \$500.00
Lieut. Milling	Third First Prize Third Third Prize Third Prize First Second	First Third Sixth Extra Second Second Third Second Third Second	First First First Second Third Fourth Fifth Sixth Sixth Eighth	\$100.00 300.00 50.00 50.00 50.00 1000.00 50.00 500.00 300.00 150.00 \$2550.00
Miss Quimby	Winner	Third	Eighth	\$600.00
Disbrow	Winner Automobile-Aeroplane Contest			\$600.00
Sopwith	Second Prize Third ½ First Second Second Second	Second Sixth First Second Fifth First Second	First First Second Second Second Third Third	\$300.00 50.00 100.00 300.00 300.00 300.00 300.00

Second	First	Fourth	300.00
First	Third	Fourth	300.00
Second	Fourth	Fourth	300.00
Prize	First	Fifth	300.00
First	Third	Fifth	300.00
Second	Third	Sixth	150.00
Second	Fourth	Sixth	300.00
Second	First	Eighth	300.00
First	Second	Eighth	300.00
First	Fourth	Eighth	600.00
Second Automobile-Aeroplane Race			400.00
			\$5200.00

THE DIARY OF FLIGHT

FRIDAY, SEPTEMBER 15.

Altamont, Ill.—Tom Benoist flew.

TUESDAY, SEPTEMBER 19.

Black Diamond, Cal.—Weldon B. Cook flew for four minutes making three circuits of a mile course. He used a Curtiss-type biplane equipped with an Elbridge engine.

WEDNESDAY, SEPTEMBER 27.

Wahpeton, N. D.—Howard W. Gill flew, remaining in the air 30 minutes.

THURSDAY, SEPTEMBER 28.

Dubuque, Iowa.—Lincoln Beachey flew in a heavy rain.

Rochester, Minn.—Thomas McGoeys flew.

Houghton, Mich.—C. C. Wittmer flew, racing a motorboat in his Curtiss hydroaeroplane. He won the race in point of time but violated the condition that he was not to leave the surface of the water. The boat made a speed of 36 miles per hour.

Mayfield, Ky.—J. Lester Weeks flew.

FRIDAY, SEPTEMBER 29.

Black Diamond, Cal.—Weldon B. Cook flew. He covered 14 miles in 15 minutes.

Mayfield, Ky.—J. Lester Weeks flew. The tail of the machine caught in a tree and Weeks was painfully injured, but not seriously. The machine was partly wrecked.

SATURDAY, SEPTEMBER 30.

Los Angeles, Cal.—Fred De Kor flew from Dominguez field to Anaheim. He maintained an altitude of 2,500 feet and covered, it is estimated, 50 miles, remaining in the air more than an hour. He ended the trip with a volplane from 2,500 feet. It was his first attempt at gliding but he carried it out successfully.

Helena, Mont.—Cromwell Dixon flew, crossing the Rocky mountains in a 26 minute flight from here to Blossburg, 18 miles distant. Later he made the return flight, covering the distance in 43 minutes. He was compelled to ascend 7,100 feet to make the flight and he won a prize of \$10,000.

Sheboygan, Wis.—Lincoln Beachey and C. C. Wittmer flew in an exhibition.

SUNDAY, OCTOBER 1.

San Francisco, Cal.—Frank Bryant, an amateur, flying a standard Curtiss biplane made a 20 minute flight over the fortifications of the Coast Artillery District. He started from Cavalry Flat on the Presidio of San Francisco.

Sheboygan, Wis.—Lincoln Beachey and C. C. Wittmer flew.

Monroe, La.—Carl Mourfield flew twice in an exhibition at Forsythe Park.

MONDAY, OCTOBER 2.

San Francisco, Cal.—Frank Bryant made a 10 minute flight at the Presidio in the Curtiss biplane owned by P. T. Criblets. He smashed the chassis in landing.

Spokane, Wash.—Cromwell Dixon flew. He fell from a height of 100 feet and was killed.

TUESDAY, OCTOBER 3.

Brockton, Mass.—Lincoln Beachey and Harry N. Atwood flew.

Nassau Boulevard, L. I., N. Y.—Earl L. Ovington, Phillips W. Page, Clifford Webster, James V. Martin, Dyott and Lieutenant Arnold flew.

Danbury, Conn.—George Schmitt, of New York, flew. He made a bad landing in a swamp when he was forced to glide from a height of 400 feet and damaged his machine, receiving slight injuries himself. He was saved by the soft mud.

Cedar Rapids, Iowa.—P. O. Parmelee flew, opening the Eastern Iowa Exposition.

Continued on page 48

THE REAL BEGINNING OF AVIATION

By J. W. MITCHELL

ONE OF PROF. LANGLEY'S MODEL BIPLANES WITH SPRING WING TIPS

By these experiments Prof. Langley had found also that theoretically at least one horse-power would sustain 200 pounds in the air at 70 miles an hour. He never claimed that this ideal was attainable in a practical machine with its maze of guy wires and consequent head resistance. But it showed that flight was attainable.

All this seems commonplace enough today. We know of flying machines, light engines, the lifting power of properly curved wings. We know above all that flying machines do fly. One French scientist has computed that 125,000 miles was covered in flight last year. We accept accomplishment as commonplace. But drop back even so short a distance as to 1891 and we find that these facts were not only unknown to the general public but accepted with hesitancy by scientists. It was an unknown field this realm of air. There was practically but one man working therein and he in seclusion. Benjamin Franklin, taking a boy along as a protection from ridicule during his kite flying experiments, was treading an easy path compared with the man who seriously studied flying machines twenty years ago.

Prof. Langley at that time was not a young man struggling for recognition. He had won his international spurs. He had developed the bolometer, and electric thermometer that would register the one one-hundred-millionth of a degree Fahrenheit, and instrument so delicate, says Prof. E. C. Pickering, as to detect the heat radiated by a cow a quarter of a mile away. By its use he had extended the solar spectrum a third of its then known length into the region of the ultra-violet. He had invented the science of astrophysics. His work was of such a high class that his very name was practically unknown to the man in the street. This reputation he risked by touching the flying machine, and he knew that he risked it.

When he started in to build his first practical model, the steam engine, the best known source of power, was considered light at 500 pounds per horsepower. What he wanted was an engine weighing just about one-hundredth of that. He got it finally in an engine, boiler and burner that weighed altogether seven pounds and developed almost one and three-fourths horsepower. But this was not the work of a day nor of a year. Every source of power at all applicable to the machine was studied—electricity, primary and storage batteries, carbonic acid gas, compressed air and even liquid air. He finally decided that as steam was the best known source of power he had better build a steam engine.

In his memoir Prof. Langley naively remarks that he was not a steam engineer, but he found that he could expect little help from the best engineers in solving the problems that confronted him. It was a large undertaking for a man of 57 to begin the study of steam engineering, but he did it. Fortunately for him he was that rare combination of an accomplished scientist and a natural mechanic. If a mechanical problem needed solving he usually could solve it and in this way after dozens of experiments he built a featherweight boiler that would carry 150 pounds of steam and an equally fragile blow lamp that would fire it. The engine itself weighed 23 ounces.

He was no steam engineer; he did not even know that a boiler would "prime". He found out that it would and designed a "separator" to obviate the trouble. In fact, working in the dark as he did, it may be almost said that he invented a steam engine.

At the same time he was working to build a stationary wing machine that was light enough to fly and strong enough to carry his remarkable power plant. To launch the machine and give it the initial velocity on which to fly he had to work for months. At last on May 6, 1896, he made a successful launch of the first heavier-than-air machine that ever flew. It covered as much as three-fourths of a mile on some of its flights. The scientific end of the problem was solved and Prof. Langley declared that he was ready to retire and leave the world to work out the commercial details.

What is strangest is that the world paid not even passing attention to the achievement. In the fall of 1896 Prof. Langley gave a special flight for the benefit of a Washington syndicate writer and this story of a machine that flew was printed in various parts of the country. Did the world stand agape that the problem of the ages

FLIGHT OF STEAM-MOTORED MODEL AT WIDewater

had been solved? Not appreciably. The world went on selling calico at 10 cents a yard and in a week the syndicate writer had to hunt for a new subject. Thus closed the end of the second period.

The "Memoir" tells with some detail the final chapter of what was a tragedy. The War Department knew in a general way of Prof. Langley's work and a special board was appointed to study it.

To be continued

E. PERCY NOEL, Founder-Editor

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The Editor is pleased to consider MS and photographs for publication, but only material that is likely to prove of interest to the readers of AERO. The Editor cannot undertake to answer technical inquiries except in the columns of AERO.

THE AERO MAIL SERVICE

It is greatly to the credit of the United States that it has a postmaster-general and first assistant postmaster-general in the persons of Frank M. Hitchcock and C. P. Grandfield, respectively, men in authority who can see the possibilities of the aeroplane as carrier of Government mails and are utilizing every opportunity for experiment in order to develop a system of real service.

The fact that Postmaster-General Hitchcock has asked for an appropriation of \$50,000 for further ex-

perimental work is evidence of the progressiveness of the Post Office Department. Let it be urged by all who have influence that this measure be adopted. If every reader of AERO will write to his representative in Congress, when that body convenes in December, urging the embodiment of the aeroplane mail appropriation in the annual budget, there is little doubt that the appropriation will be authorized.

In just what ways the aeroplane will be of the greatest value to the Post Office Department is now largely a matter of conjecture. The real value can only be learned definitely by actual practice. But it appears that the greatest utility, in the present state of aeroplane development, would be in the delivery of mail to isolated places where the weight of mail dispatched is comparatively small.

The hydroaeroplane might be used even now, with probably better regularity than a land machine, to carry mail with greater speed than any railroad, between river points. Besides, with a substitute machine and aviator available it is now practical to carry mail overland for short distances.

It seems that the most practical step to be taken immediately, or upon the appropriation of money for the purpose, is to inaugurate special service between comparatively close points, such as St. Louis and Chicago, and to require a special stamp of the same or double the value of the special delivery stamp upon each piece of mail matter. Such a service could be maintained by the use of a dozen aeroplanes and aviators at an initial cost of \$50,000 and an operating expense—barring breakage—of \$500 a day or less. It would be possible to carry at least 3,000 pieces a day, the revenue more than covering the expense.

There is no doubt that the aero mail service would be supported in the experimental stage, while if it proved efficient there would be no lack of substantial support afterwards. At the same time the cost of the service would decrease, as aviator-postmen were trained for the work, receiving salaries about equal to or even double those paid engineers on limited passenger trains instead of \$50 a day, as estimated above.

We cannot tell how long it will be before the aeroplane is in regular use for mail carrying, but the time is not far off, of this we are certain. A few years of experimentation, during which period the aeroplane will probably be developed to such an extent that present-day machines may be obsolete, and our knowledge of the air increased if not doubled, the aero mail carrier will be no longer a fancy but a fact.

The Curtiss Aviators will exhibit in San Juan, Porto Rico, December 7 to 12 of this year. The Annual Insular Fair, held to develop agricultural interests in Porto Rico comes at the same time and it is hoped that the flying will draw large crowds. The Curtiss Company plans a long south American tour for this winter, and this engagement is to start it.

Activity of Aviator and Builder

Clarence Ness, of Winona, Minn., has purchased a Farman type aeroplane from a firm in Oakland, Cal. Delivery was made the week of September 30. Ness expects to begin practising immediately.

Reuben Richards, of Manitowoc, Wis., has left a position with the Richards Iron Works, owned by his father, to enter an aviation school.

It should be noted that the book "How To Build an Aeroplane," was translated into English by Hubbard and Ledebor and not Ledebor and Turner, as it was printed in a recent issue.

C. A. Elton, who made the flight across Ohio a few weeks ago, is booked for the next five weeks at Cumberland, Md., Chester, Pa., Philadelphia, Pa., Baltimore, Md., and Richmond, Va.

The Wright Company has filed suit against members of the Aero Club of Columbus, Ohio, for failure to pay guarantees and royalties promised for the Columbus meet, held several months ago.

The Emeline Fairbanks memorial library, of Terre Haute, Ind., in a letter to a local newspaper, recommended the following as a list of the world's best books on aviation: "Airships, Past and Present," by Hildebrandt; "The Zeppelin Airship," by Curtiss; "Progress of Aeronautics," by Jansen; "Experiments with The Langley Airship," "Greatest Flying Creature" and "Langley Aerodrome," all by Langley; "Santos-Dumont Circling the Eiffel Tower," by Iyle; "Vehicles of the Air," by Loughheed; and "Progress With Airships," by Lowell. These books with the exception of Langley's and Loughheed's works are probably not near enough up-to-date to be especially interesting to the builder of to-day, and would be useful only to the man interested in the literature of the subject.

The F. J. Gould Hardware and Implement Company, of Blackwell, Okla., wishes to contract with an aviator for flights at a local celebration.

William Rockus, of South Windsor, Conn., has filed suit against Earl L. Ovington, the aviator, for \$10,000 alleging that Ovington carelessly ran into him with an automobile on July 3. Rockus' attorneys have attached the \$10,000 won by Ovington in the 160 miles race held on Labor Day. Ovington says that Rockus was walking in the center of the road and paid no attention to the horn of the machine and that every effort was made to stop the car. An injury to his steering gear, Ovington says, resulted in his striking Rockus. He took the man to the hospital, spent the night near him, paid his hospital bill and left only when he was assured by the doctors that the man's injuries were superficial. He also left him money in addition to his hospital bill.

Roy E. Van Atta, of 4424 Campbell St., Kansas City, Mo., a consulting engineer, visited St. Louis during the course of the free aviation meet. He spent a great deal of time at Kinloch field.

Leonard W. Bonney, a Wright pupil, has obtained his release from the Wright aviators and is now flying under the management of W. M. Gabriel. His last appearance was at Howard, Kans., October 3-6. He is desirous of booking a cross-country flight during October or November.

C. C. Bradley has been making tests with a headless biplane at Cavalry Flat, Presidio of San Francisco, and is now packing his machine preparatory to storing it for a short time. Bradley has been using a 22 horsepower Ford automobile motor which while giving him enough power for grass cutting and ground work has not developed enough speed for flying. He will look around for a motor that suits him, when he will again be seen on the flying field.

Frank Bryant, who has been one of the attractions at Cavalry Flat, Presidio of San Francisco, has contracted to appear at the Apple Annual at Watsonville, Cal., October 11-15. He is using the biplane which Clarence Walker used in the Orient and has developed much speed with the eight cylinder Curtiss engine. Bryant will give a number of exhibitions in California under the direction of Norman De Voux, Pacific Coast representative for the Curtiss Company.

P. L. Cribblets is ready to try out at the Presidio of San Francisco with a standard Curtiss biplane equipped with a 50 horsepower five by five Maximotor. His propeller was made by Charles H. Paterson, who has opened an aero supply house in this city.

E. N. Yearsley of San Francisco, has completed preliminary tests with a headless biplane made by McKey of Los Angeles and is booked to fly at Cedar Falls, Iowa., some time during the latter part of the month. He will install a Hall-Scott motor.

Emil Rossi of Dixon, Cal., has completed a standard Bleriot type monoplane and is having a set of wings made by Paterson of San Francisco. He will install a 35 horse power Anzani motor.

DATES AHEAD

Chillicothe, Mo., October 11-14, Benoist Aviator.
Jerseyville, Ill., October 12, Benoist Aviator.
Paris, Ill., October 24-28, Benoist Aviator.
Rockingham Park, Mass., October 12, exhibition.
Middleboro, Mass., October 18, Harry N. Atwood.
Albuquerque, New Mex., October 11-14, C. F. Walsh.
Raton, New Mex., October 21-22, C. F. Walsh.
Garden City, Kan., October 25-27, C. F. Walsh.
Fort Smith, Ark., October 16-21, Glen L. Martin.
Watsonville, Cal., October 11-15, Frank Bryant.

NEW CORPORATIONS

The Eagle Aerial Navigation Company, San Diego, Cal. Capital, \$50,000. Incorporators, Charles R. Mitchell, Carl Johnson, Bertie Mitchell.

Mid-West Aviation Company, Sioux Falls, Ia., to manufacture aeroplanes, ice-boats and tools. Capital \$25,000.

Security Aircraft Company, Shreveport, La., to manufacture aircraft. Capital, \$250,000. Incorporators, Dr. C. W. Lawrence, B. Cannon, J. J. Hudson, T. D. Coupland, Otis Williams and E. M. Bramlette. Company was organized in Longview, Tex., but will operate in Shreveport.

The Dean Manufacturing Company secured permission from the secretary of the State of Ohio on October 5, to increase its capitalization from \$100,000 to \$150,000, in order to develop aeronautical motors.

ELEVEN FLIERS NOW AT KINLOCH

Kinloch, Mo., October 9.—There are now eleven machines in the hangars here, all of which have flown. George W. Beatty is the latest arrival. Amadee Reyburn, Jr., is now one of the most active fliers here. He practices every day and is rapidly learning the feel of the air, while for the past week he has been able to make turns.

Sunday was a busy day on the field. Reyburn took his monoplane out for two circles of the grounds and several others made short jumps. Tom Benoist installed a new six-cylinder Roberts in a new plane and surprised the field by making a double circle on his first attempt to fly it. This machine will be sent out of town this evening to fill an engagement at Chillicothe, Mo., while another Benoist plane, with a four-cylinder Roberts will be sent to Bloomington, Ind., where Horace F. Kearney will fly on Wednesday, October 11.

In addition to five machines without motors, the following fully equipped planes are in the hangars:

Owner.	Machine.	Motor.
G. Moran.	Monoplane.	4-Cyl. Roberts.
W. H. Robinson.	Farman-type.	4-Cyl. Roberts.
Tom Benoist.	Benoist, No. 11.	6-cyl. Roberts.
W. H. Bleakley.	Benoist, No. 10.	4-cyl. Roberts.
Tom Benoist.	Benoist, No. 10.	4-cyl. Roberts.
C. A. Prouse.	Headless Biplane.	6-cyl. Kirkham.
A. Reyburn, Jr.	A. A. S. H.-Bleriot.	6-cyl. Emerson.
G. W. Beatty.	Wright.	4-cyl. Wright.
Pioneer Aviation Co.	Wright.	4-cyl. Wright.
F. A. Pine.	Curtiss.	6-cyl. Emerson.

Aero Club of Saint Louis

Temporary Office: 19 South Broadway, St. Louis.

E. Percy Noel, Secretary.

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MAIL-CARRYING WAS ST. LOUIS MEET FEATURE.

Continued from page 37.

The balance of his plane was at once perceived to be faulty, for the tail hung heavily, giving one always the impression of stalling.

Starting at 4:54 he made a wavering half-circle to the west and then disappeared behind the roofs southwest of the field. Those on the field waited a few minutes and then a party started out to find Beachey. He had fallen in a dairy yard two blocks south of the grounds, his plane having struck partly on the roof of a shed and partly in the yard. Beachey himself was thrown clear of it and he struck the soft dirt of the yard free of the debris. He was unconscious for several hours after the accident, but rallied from the shock rapidly and was at the field on Sunday. Brookins brought the day to a close with a short exhibition flight. W. H. Bleakley made two attempts to win the quick-start contest, but each time he tried, his plane swung around suddenly and all but plunged into the crowd. It was then dark and the events were declared off for the day.

THURSDAY.

The day was somewhat cloudy with a very strong wind. Brookins made two flights, the first of them with the mail. He circled twice about the field with it, covering an estimated distance of two miles. He went up at 4:43:58 to descend at 4:47:42, making bitter remarks about the wind.

"I got every kind of wind current that ever blew," he announced. Everyone on the grounds had guessed it.

When a biplane piloted by so experienced a pilot as Brookins, is seen to rock and toes like a small boat at sea, even the layman knows flying conditions are bad. Brookins waited an hour and tried it again, but descended at 5:30 after being up five minutes, saying it was worse, if anything, than before.

FRIDAY.

On Friday it was cloudy and the wind was stronger, although not so gusty. Brookins made two flights, from 4:38:07 to 4:41:47 and from 5:20:50 to 5:29:25. On the first flight, as before, he carried the mail. By this time he had felt out the air currents near the field, pretty thoroughly and was able to control his machine more easily. C. P. Grandfield, First Assistant Postmaster General, Frank Hitchcock, visited the field and talked with Brookins for nearly a quarter of an hour after his first flight.

SATURDAY.

On Saturday it was cold and raw with a high wind blowing and at times a light rain falling. Flights were declared off at half-past five and the slight crowd, which had been waiting all afternoon for an abatement in the wind, left the field. W. H. Robinson, when he saw that the field would be clear for some time, brought his Farman-type out for some ground practice about four o'clock. He narrowly risked smashing a wing twice when the wind tilted his machine over suddenly. It was by this time a headless Farman-type, for in a morning trial Robinson had tilted the machine on its nose and smashed the front elevator. The tail plane had been made to work in conjunction with it, however, so he was able to continue making jumps in the plane for the rest of week.

SUNDAY.

On Sunday, although the day was dull there was no wind. G. W. Beatty who had been offered \$5 an hour if he would fly from 2:30 to 5:30, superintended the setting up of his machine during the morning and then tried it out on two short flights just after two o'clock. Then when 2:30 was at hand he suddenly announced that he wanted

his dinner. He was urged to forego the meal but he refused to do this. Lewis Spindler escorted him in an automobile to a hotel where he proceeded to partake largely of the offerings on the bill of fare. Beatty ate tranquilly while Spindler kept an anxious eye on the clock. Every second that went by cost the aviator 85 cents, but he seemed cheerfully unaware of it.

"I couldn't miss my Sunday dinner for anything," he said.

The return to the field was made in record time and Beatty's Wright biplane was made ready for him. At 3:21 he started. Unfortunately he made only one circle before his engine suddenly stopped, bringing him down at 3:23.

Brookins was the next to fly. He was up with the mail at 3:34:56. After circling for several minutes he dropped the mail sack to the ground at 3:40. It was three minutes more before he brought the flight to an end. At 3:58 he went up again, this time for bomb-throwing. The targets were about four feet square and were located in the fair grounds lake situated directly behind the hangars. Brookins dropped two bombs missing the east target by about 20 feet and the west by 15 feet. He came down shortly after throwing the second bomb, landing at 4:03:58. A half-hour's rest and he was up again to be the only competitor in the five mile speed contest. He made the required six laps in 4:43, a little more than a mile a minute if the measurements were exact. After completing five laps he cut several figure eights, remaining in the air a total of seven minutes 40 seconds.

Then the lead weight was removed so that Andrew Drews, who uses the seat farthest from the engine and does not need the balance weight, could fly. He went out for accurate landing. Arising at 4:58:53 he circled the field twice and brought his plane down in a rather sharp spiral, landing 69 feet from the mark at 5:01. The lead was replaced and Brookins went up at 5:11 for the flight of the day. He stayed up 12 minutes 47 seconds and attained an altitude of 2,500 feet. He finished the flight with a long glide of nearly 2,000 feet which lasted nearly a minute and a quarter. After this, Kearny produced his surprise flight and the day was over.

Robinson Carried Mail from Missouri to Illinois

St. Louis, October 9.—Despite cold, gray weather yesterday morning thousands of people lined the river front and congregated on McKinley and Eads bridges to see Hugh Robinson make local aero history during the twenty minutes that he rode his Curtiss hydro-aeroplane up and down the Mississippi.

He carried United States mail from one state into another. Besides he was the first aviator to rise from the water in an aeroplane in this vicinity and the first to fly both under and over all of the bridges that span the river at St. Louis. His operations extended from a point above Merchants Bridge to the partly built free bridge.

His flying hour had been set for 10 a. m. to 11 a. m. At 10:38 he was in his plane, rushing away from the levee at the foot of North Market street. A moment later he headed upstream, soon to rise into the air, circle about on the east side of the river and climb to an altitude of perhaps 750 feet. Heading downstream, he passed over Eads Bridge at a good height, drove as far south as the free bridge piers, swung around and let the hydro settle on the surface of the river like a duck. Soon he climbed into the air again and passed under Eads on his way north. On the north side of it he again alighted on the surface, almost immediately to rise in the air again.

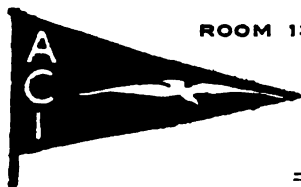
As Robinson approached his starting place he steered in near the shore and came down for a short run along the surface. Soon after he was high in the air again, so that he passed well over the top of McKinley Bridge. He then went under Merchants' Bridge and, continuing north, disappeared from the view of the watchers at North Market street, and the Power Boats' Association floats.

After what seemed a long interval, the hydro-aeroplane again came into view, flying low. It came under Merchants' Bridge on the return trip just as two long freight trains were crawling across it, showing in strong contrast the ways of travel.

Robinson came under McKinley Bridge, swung around in a great circle to face into the wind near his starting point and again touched the water—for the sixth time during his flight. On the water he steered into the Levee at moderate speed, landing with the nose of his hydro within a foot of the spot where it had entered the Father of Waters.

He arrived at the Power Boat Association float at 10 a. m., went to his machine, gave his mechanics a few directions and soon after the propeller was whirling to test the motor. Under the aviator's direction the hydro was slipped down to the water on two planks until about three feet of the float was in the water. A mechanic cranked the motor, held the plane a moment as the propeller gathered speed, then let go. Robinson steered out into the current without any hesitation and soon showed himself master of it and his responsive machine.

THE AERO CLUB OF ILLINOIS



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CHICAGO

FLYING FIELD
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BULLETIN

To the Members of the Club:

To enable the Aero Club of Illinois to maintain its Flying Field, which is second to none in the world, for another year, it will be necessary to take in at least 500 new members before the next annual meeting of the club which will be held January 16. Under the present circumstances, and in the face of the prospects for hangar rental, insufficient income will be provided to maintain the lease another year. Will members address letters to the Secretary offering suggestions on how the membership may be increased, or other suggestions relative to the maintenance of the field, so that the Directors may have a line on the wishes of the members in this regard?

GROVER F. SEXTON, Secretary.

Smith's Monoplane Makes Flight

Chicago, October 6.—Franklin P. Smith's low center of gravity monoplane made its first flight today, and greatly surprised the aviation colony at the Flying Field with the quality of its performance. Smith has been running it over the ground for about a week getting acquainted with its action while in motion. To-day he opened the throttle on the 50 horse power radial engine of his own design, and the steel monoplane rose on a level keel to a height of about 15 feet.

Because of the necessity for heavy rudder action while running over the ground, Smith finding himself approaching the fence turned the tiller over for a turn, and turned his machine almost clear around in its own length. This was too much for the equilibrium of the machine and it dropped to the ground. One wheel was broken and the propeller was slivered, but nothing else hurt as will be seen from the picture accompanying this.

The front beam of Smith's 20'x10' main plane is rigidly secured with steel. The rear beam as will be noted, is guyed to a movable pylon projecting downwardly in front of the pilot's seat, so that the whole surface appears abnormally flexible. While this appears very unstable on the ground, it fulfills Smith's idea of a proper surface to maintain equilibrium in the air. It will be interesting to note the results he gets from it, especially in so far as they show the value, or lack of it, of this excessive flexibility.

Also, as will be seen from the picture, Smith uses a chassis, the action of which is something similar to that of the R. E. P. machine. Each one-half of the axle is hinged to the curved bottom member of the fuselage, and a distance rod runs from the wheel axle through a compression spring to the top member of the fuselage.

The pilot sits behind the engine, and control having only two directions for elevation, and for steering to right and to left. There are no ailerons, the machine depending for its lateral stability on the extreme flexibility of the wings. An extra fixed vertical surface is attached near the rudder for better directional stability. Fuel is carried in the dash which also forms a shield for the operator and is forced into the cylinders under pressure. The motor turns an 8-foot 6 inch by 5-foot propeller at 1100 r. p. m.

A peculiar feature of this machine is that no turnbuckles are used in the steel fuselage. All guy wires are double, and are twisted to the proper tension, the cross wires on each panel being held together by a binder wire.

Gregory Seeks a Motor

Chicago, October 4.—Donald Gregory, the Michigan City young man whose tandem monoplanes have been so successful as gliders, has a tandem plane at the field for which he seeks an engine. Recently he tried out the new eight cylinder motor made by Andrew Smith, but the adjustments did not seem to be just right, and no fair trial was made. The accompanying sketch gives a good idea of Gregory's machine, showing the location of the propeller which is chain driven, the motor, the wings, elevator rudder and the operator. No ailerons or wing warping device for lateral stability is provided, the wings having a substantial dihedral angle, and this machine, like Prof. Montgomery's, has been a very efficient glider, and it will be interesting to note the results he gets from it with a power plant.

ROBINSON ESCORTS TAFT TO SEDALIA

Sedalia, Mo., October 6.—Flying in connection with the Missouri State Fair, Hugh A. Robinson gave a wonderful exhibition here beginning September 30. On four out of the six days he was booked to appear, he flew in spite of perilous weather conditions and the warnings of his manager, Thomas Walsh. On Saturday, September 30, he took his biplane out at eight o'clock in the morning and flew 20 miles across country to meet a special train carrying President Taft, on its way from Moberly. It was the first time that an aeroplane ever followed a President's train and the first time for an aviator to act as a "reception committee."

Robinson had no trouble in following the railroad tracks until he found the train and once he had encountered it he saluted the President with a series of aerial dips, swooping once over the locomotive, once over the train and again behind it. President Taft stood on the rear platform for all of the 20 miles into Sedalia, waving his presidential flag to Robinson and giving evidence of great enthusiasm. When they reached the town Robinson flew about over the fair grounds for 15 minutes and kept the President's attention for so long a time that he unwittingly kept the reception committee, headed by Governor Hadley of Missouri, waiting for more than 30 minutes.

In the afternoon Robinson made three more flights, starting and finishing directly before the President's box. He arose from and alighted on the narrow race track itself, disdaining the broader field offered by the oval. After his third flight had been completed President Taft sent for him and congratulated him upon his daring but excellent flying.

No more flights were made after Saturday until Tuesday, when Robinson went out twice. On Wednesday he found the weather slightly better and flew three times to please a very large crowd. On Thursday he made two flights and promised to end the engagement on the next day with the best flying of the week, but he was compelled to retract this when Friday proved stormy and threatening with a high wind. Robinson left this evening for St. Louis, with a return booking promised for next year.

RODGERS STILL ON WAY TO COAST

Joliet, Ill., October 8.—Calbraith P. Rodgers is gamely flying on to the Pacific, although he says he has given up all hope of completing the journey in time to win the Hearst \$50,000 prize. He arrived here at 5:20 this evening and to-morrow he will continue on his way to Kansas City. His landing here was made in a field owned by Daniel O'Connor, located nearly one mile from Deerwood Park and midway between this city and Lockport, Ill.

Rodgers left Hammond, Ind., 20 miles out of Chicago, at 11:31 and arrived in the Windy City at 11:57. After several hours of rest he left Chicago at 4:03 this afternoon and came here in 73 minutes covering an almost equal number of miles. Yesterday he made his first flight of the week when he left Huntington, Ind., where he has been delayed while awaiting a new part for his engine. Yesterday's flight started at 11:30 in the morning and covered 138 miles with a stop at Aldine at 12:47. He reached Hammond at 5:44 in the afternoon. Rodgers' mileage so far is 1,173 and his total flying time 1,380 minutes.

Robert Fowler has temporarily abandoned the race. He will return to Los Angeles, it is said, and make a new start in a few days.

Charles H. Paterson, the San Francisco propeller maker, has moved from 587 McAllister street into new and larger quarters at 1714 Market street in the building occupied by the Eames Tricycle Company. He will make a specialty of all wood parts of aeroplanes and propellers.

AERO MART

These Notices Bring Results

ALL WANTS 1c A WORD FOR SALE and FINANCIAL, ETC. 2c A WORD

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BOX NUMBERS

If desired, replies may be received at the offices of the Aero Publication Company. Advertisers wishing to take advantage of this convenience will pay 10 cents extra for registration, to cover the cost of forwarding replies.

SITUATIONS VACANT.

MANAGER—Young woman, 18, about to learn to fly biplane, desires manager with some capital. Have driven motor cars, 100,000 miles cross-country and am expert mechanic. Reference given and required. Address Box 137, care Aero, St. Louis.

SITUATIONS WANTED.

ASSISTANT—Wanted position in factory or as chief aviator's assistant by expert aeroplane designer and mechanic with two years' experience. Have built three machines and made many short flights in two of them. Best of references. Age 24, Address R. M. Kinderman, 115 Clay St., Morgantown, W. Va.

ASSISTANT—Situation wanted by Englishman, familiar with various types of aeroplanes. At present employed, desires change, in southern states or California. Trustworthy and obliging. References. Box 141, care AERO, St. Louis.

AVIATOR—Aviator machinist of technical and practical experience with steady position with motor constructing firm, or aviator; willing to go anywhere or travel. Speak French and German, and have first class references. Care AERO, Box 143.

AVIATOR—Young man at present employed as instructor in automobile school wishes position as aviator, mechanic, or aero school instructor. Have wide experience on all makes of autos, motor-cycles, and marine motors. Have studied every type of aero motor, control, and landing gear for past three years. Cy. Tegner, 1551 E. 27 St., Cleveland, Ohio.

GNOME EXPERT—Gentleman requires situation as Gnome engine expert; thoroughly qualified. Salary required 20 pounds (\$100) per month and expenses. Detailed particulars from C. W. B., 52 Monmouth Rd., Bishopston, Bristol, England.

HELPER—Young man, 18, with good habits, desires a position with aviator as helper or in aeroplane factory. Great enthusiast, strong and ambitious, although inexperienced can furnish first class references. Address F. P. C., care AERO, St. Louis.

INSTRUCTOR—French instructor in aviation, speaks English, desires position as instructor. South preferred, has had three years' experience. Best reference. Owns two complete aeroplanes and motors, open for any good proposition. Box 140, care AERO, St. Louis.

MECHANIC—Situation wanted by a French mechanic; three years' experience on aeroplanes, speaks English, highly recommended. Box 321, Mineola, N. Y.

MISCELLANEOUS WANTS.

BLERIOT MONOPLANE WANTED—Will pay about \$1,000 for complete machine. Send all particulars in first letter. Address Box 133, care Aero.

GNOME—Wanted an old useless Gnome motor. State its price and horse power. Mr. Stockman, 721 Main St., Cambridge, Mass.

MOEDEBECK HANDBOOK—Wanted a copy of Moedebeck's Handbook. Will pay \$2 for second-hand copy in good condition. Box 200, care Aero, St. Louis.

MODELS AND MODEL SUPPLIES.

COMPLETE PLAN drawn to scale with full instructions for building the only Wright three-foot biplane model that positively flies; 25 cents post paid. Drawing and directions for three-foot model Bleriot monoplane, 15 cents. Stamp brings most complete, interesting and instructive catalogue published. Ideal Aeroplane and Supply Company, 84½ West Broadway, New York, N. Y.

SUPPLIES—Aerodaster Model Aeroplane Supplies. We specialize on all guaranteed work. Write for particulars about our Tube motor, double-propeller attachment, and our Aerodaster monoplane Racer. Stamp brings catalogue. Aerodaster Construction Co., 3751 Indiana Avenue, Chicago.

FOR SALE.

AEROPLANE—For sale, Curtiss type aeroplane. New or exchange for good motor. Cause motor failure. Will send photo. Box 144, care AERO, St. Louis.

AEROPLANE—Curtiss type biplane, equipped with American-British motor. Will sell with or without motor. Have made several flights. Write for photo, description and price. Charles Ed. Hathorn, Mason City, Ia.

AIRCRAFT SUPPLIES—Aeroplanes for sale and built to order; propellers, models and model stock; Chicago engines; flying models. Chicago Aero Works, H. S. Renton, Prop. 164 N. Wabash Ave., Chicago, Ill.

AIRCRAFT SUPPLIES—Aeroplanes for sale and built to order. Submit your designs and get our prices before going further. Propellers, wheels and fittings made to order. The Eaton Brothers' Factory, 1708 Echo Park Ave., Los Angeles, Cal.

BLERIOT—Genuine Bleriot, 25 h. p. motor, perfect condition. Price \$2,000. Quantity spare parts. Offers. Timberlake, Great Northern Hotel, New York, N. Y.

BLUE PRINTS—Model blue prints this week only 75 cents. Three-foot scale, Antoinette, Bleriot, Nieuport, Curtiss, Farman. Wright prints. Stamp for catalogue. Aerodaster Construction Co., 3751 Indiana Ave., Chicago.

CURTISS—Aeroplane Curtiss Military type, new this season, perfect flying condition; made more than 30 flights; \$2,000 motor included ready for shipment. Complete, \$1,500, best bargain in America. P. O. Box 361, Mineola, N. Y.

DEMOISELLE—For sale or exchange, steel frame Demoiselle. W. J. Morgan, 4528 Kennerly, St. Louis, Mo.

GNOME-FARMAN—Complete Farman-type machine. 50 horsepower Gnome motor with lots of extra parts. Guaranteed to fly and in perfect condition. Tools and accessories. Will sell separate. Box 130, Aero, St. Louis.

MAXIMOTOR—50 h. p. Maximotor has been run only thirty minutes. First draft \$350.00 takes it. Box 203, Watertown, Wis.

MAXIMOTOR—40-50 horsepower. Guaranteed by makers; 300 pounds thrust; almost new. Price \$500 cash. Wm. Kirkbridge, 1055 Woodward, Detroit, Mich.

MONOPLANE for sale. Santos-Dumont-type aeroplane, 30-horsepower motor, magneto, extra wings; first bidder at \$600. Address Carath Oval Tubing, Worcester, Mass.

MOTORS—Engines; 30 h. p., 210 pounds; thrust, 50 h. p. 300 pounds thrust, full equipment. Fine condition. Box 142 AERO, St. Louis.

FOR SALE—Continued

MOTORS—Three cylinder 45 h. p. motor, A1 condition; must be sacrificed on account of aviator's death. No reasonable offer refused. Also propeller. Can be seen. Ed. Lowey, 593 E. 136th St., New York. N. Y.

POCKET AMMETERS—One thousand Guaranteed \$2.00 pocket ammeters for testing batteries. 25 cents post paid. Chamols leather case with each. Stamps taken. Automobile Repair Company, 521-523 West 144th St., New York.

PROPELLER—Best grade walnut propeller built by Chelsea Aero Co. 8 feet 6 inches diameter, 6 feet 6 inches pitch. In excellent condition. Used only for six hours testing engine thrust. Will accept any reasonable offer. For particulars A. V. Reyburn, Jr., 5305 Delmar Blvd., St. Louis, Mo.

FINANCIAL.

AID—Woman aviator wants financial backing. I have 10 positive engagements booked for exhibition flights, with good prospects for more. I want financial backing to carry out these flights and to purchase my own biplane; \$7,500 required. Address Blanche Stuart Scott, Aero Club of New York, Nassau Boulevard, L. I.

AID—Competent aviator Young man, graduate Wright School, Dayton, O., desires financial backing. Address W. E. B. care Aero, New York, N. Y.

INSTRUCTION.

LEARN to fly in two weeks. Students operating biplanes alone the first day; flying daily, weather permitting. Competent instructors in attendance. Aeroplane construction; also care and motor knowledge free. No bond required for breakage, terms very reasonable; write for terms. Aviators and aeroplanes supplied for exhibitions. Francaise Americaine Co., Mineola, L. I., N. Y.



1,004,558, October 3, 1911.—Charles H. Duncan, New York, N. Y. A flying machine having a load-carrying means, a frame connected thereto and a plane normally in engagement therewith at the center and tiltable in respect thereto to shift the point of contact toward one edge of the plane.

1,004,559, October 3, 1911.—Charles H. Duncan, New York, N. Y.—A flying machine, having a main plane, a spider upon which said plane may rock, and an aileron carried by said spider and controlled by the rocking of said main plane.

1,004,662, October 3, 1911.—Charles A. Kuenzel, Buena Vista, Colo. An airship embodying a plurality of gas bags arranged side by side, a yoke above said bags, bands adapted to encircle said bags, means for securing said bags with said yoke at the top of each bag and at the terminals of said yoke, straps connected with the bands of the outside bags and extending upward to the band of the intermediate bag, and means yieldingly and firmly connecting the band of the intermediate bag within the sides of said yoke.

1,004,742, October 3, 1911.—Frederic J. Coates, Philadelphia, Pa. An aircraft having a hinged socket, a single parachute disposed horizontally in a collapsed state, the stem of said parachute being normally received in said socket, manually operated means for raising the parachute free of said socket to vertical position above the aircraft in extended position and means for anchoring the parachute to the aircraft.

1,004,761, October 3, 1911.—Francesco Filiati, Naples, Italy. A device for floating aeroplanes comprising a casing containing air under pressure and provided with an outlet, a valve closing said outlet, an inflatable bag having its opening secured to the casing and arranged to receive air discharged through said valve outlet, means for operating said valve, and a paper bag for retaining said first named bag in a folded or collapsed position.

1,004,805, October 3, 1911.—Mihaly Mihalyfi, New York, N. Y. A flying machine comprising a cage-shaped frame, a motor carried thereby, a plurality of screw propellers actuated by said motor, an aeroplane located above the top of said frame, a transverse bar rotat-

ably mounted in the front top portion of said cage, a set of supporting rods pivotally attached to the front portion of said aeroplane and rigidly secured to said transverse bar, a second set of supporting rods pivotally attached to said aeroplane and to the rear top portion of said cage, and means for oscillating said transverse bar.

1,004,944, October 3, 1911.—Thomas Malcolm Walling, Tinton Falls, N. J., assignor to Monmouth Aerial Vehicle and Transportation Company, a Corporation of Arizona. A flying machine having a pair of air-supported vanes extending laterally on the sides of the machine, and a yard extending transversely of the line of normal flight on which said vanes are mounted, the rear portions of said vanes being free, in combination with a lever fulcrumed on the machine at a point to the rear of the yard, and means for connection each arm of the lever with the rear portion of the vanes, whereby the increase of air pressure on one of the vanes acting to lift the same will cause the other vane to be depressed.

1,005,026, October 3, 1911.—Robert P. Hall, Searchlight, Nev. A flying machine comprising a frame, a supporting surface, stabilizing wings pivoted for vertical movement at the front of the supporting surface, a sliding rack, gear elements actuated by the rack, automatic means consisting of a pivoted weighted swinging lever which is controlled by the tilting of the machine for sliding the rack, and means actuated by said gear elements for simultaneously adjusting the wings in opposite directions upon the movements of the rack in either direction.

1,005,089, October 3, 1911.—Michael H. Whalen, New York, N. Y. A flying machine having main supporting surfaces comprising a substantially flat surface at the top of said machine and a surface curved upon its longitudinal axis beneath the same, said surfaces extending entirely across and fore and aft of said machine to the front and rear controls thereof, an elevator comprising said rear control, and a rudder comprising said front control, and superimposed supporting surfaces at the sides and at the front and rear of said machine.

1,005,097, October 3, 1911.—Romeo Wankmuller, Berlin, Germany, assignor to Luft-Verkehrs-Gesellschaft M. B. H., Charlottenburg, near Berlin, Germany. A balloon comprising a main car and auxiliary cars suspended from the envelop, rigid connections between the auxiliary cars pivoted together above the main car and means for raising and lowering the pivot of the said rigid connections from the main car.

1,005,120, October 3, 1911.—Ernest Peter Vincent, New York, N. Y. A rudder comprising a vertical frame mounted transversely of the machine, a pair of vertical frames mounted upon vertical axes so as to rotate within said first mentioned frame, and a pair of surfaces mounted upon horizontal axes within said last mentioned frames.

Books Received

The Law of Motor Vehicles, by Berkeley Davids, the Edward Thompson Company.

Smithsonian Meteorological Tables, third revised edition, Smithsonian Institution.

Aerial Navigation, by Albert F. Zahm, D. Appleton and Company.

Art of Aviation, revised edition, by R. W. A. Brewer, McGraw-Hill Book Company.

Vehicles of the Air, revised edition, by Victor Lougeed, Reilly, Britton and Company.

Model Balloons and Flying Machines, by J. H. Alexander, Norman W. Henley Company.

CONQUER GALES AT BROCKTON

Brockton, October 4.—Despite a heavy rain and a high wind, Lincoln Beachey in his Curtiss biplane today made an 11 minute flight on the second day of the Brockton Fair. The fair management declared that they would not ask Beachey nor Harry N. Atwood, who was exhibiting in his Burgess Model F biplane, to make flights, on account of the high wind.

Beachey circled the grounds three times at an altitude of 400 feet and then circled, his frail biplane careening perilously in the gale, to a height of 1,200 feet, at times being lost to view in the low-lying clouds. After several dips and a fight over the grand stand, Beachey concluded his exhibition with a 300 feet volplane, striking the ground like thistledown.

Both Beachey and Atwood made flights yesterday and are proving the stellar attractions of New England's famous cattle show.

Additional 1912 Plans for Aviation

In Ohio the Aero Club of Cleveland has been dissolved but happily such a dilatory spirit is not reflected in the other cities of the state. In addition to Canton and many other of the smaller cities of the state, Wapakoneta is willing to consider an offer for four days of flying from August 30 to September 4, upon any fair basis. No exhibitions have ever been had in this town and it appears to be a very good opening. At Kenton an exhibition was spoiled this year by rain and the authorities are doubtful about attempting to hold another. The Paulding Fair is doubtful owing to the fact that there have been several good exhibitions near at hand. A dirigible exhibition, by Strobel was very successful there two years ago.

The Thomas, (Okla.), Chamber of Commerce is taking a long step forward. Most of its members wish to substitute an aeroplane exhibition for its annual street fair, believing it will bring them more advertising and also have a wider appeal. In Pennsylvania the Smythe Park Association of Mansfield, will hold an exhibition to aid a celebration somewhat similar to a street fair. It is urged by many that two such events would prove a very strong card in the case of cities wishing to attract people. The success of this year's Mansfield exhibition will decide whether another will be held in 1912. In Hanover, a successful exhibition was held this year and it is very possible that another will be given during the third week of September, 1912. The total attendance for a two day exhibition at Hanover this year was 50,000 and the flying was the best drawing card it has had in many years.

The Calleton County Fair Association, of Walterboro, S. C., will use an aeroplane next year, and possibly from November 7 to 11 of this season. Contracts are made upon a percentage basis and the management thinks it would be a very good engagement, more especially for the man who flies the first exhibition in the town. Memphis, Tenn., has already been the scene of several meets and exhibitions and will not book any aviators during 1912, although the Tri-State Fair Association offers to rent its grounds to aviators or aviation companies.

Washington holds forth one good opening for, with one exhibition already set for October 2 to 8, of this year, plans are being made for another to come October 1 to 7, 1912. Contracts will be made at a flat rate per flight. This year's flying is expected to be a great crowd puller.

The state of Wisconsin, in addition to being the home of many aviators and inventors, has had a very busy season and—to use the words of the Indiana secretary quoted before—"It wants more." At Beaver Dam the Fair Association of the same name will use an aeroplane attraction at a fixed rate per flight. No exhibition has been held there before. In Lancaster, the Grant County Agricultural Society will give an aeroplane exhibition some time during September 1912, in connection with its fair, while the Milwaukee Chamber of Commerce is planning a large exhibition meet for next summer.

Canada offers a good field, but only fliers who are used to getting off the ground rapidly should attempt it, as the grounds average poor. In Calgary, Alberta Province, the Calgary Industrial Exhibition Company held a five-day exhibition this year and drew 92,000 people. It may repeat next year. The St. John Exhibition Association will probably hold an exhibition from September 1 to 9, 1912, if its grounds are available. The town of Picton, Ontario Province, will use an aeroplane about May 24, probably on a percentage basis.

FIRST HANDICAP SHOWS GOOD FIGURES

New York, October 7.—An interesting handicap event for all types of aeroplanes was arranged for the last day of the Nassau Boulevard meet. Owing to the inclement weather the ninth day's program was not run off. The Contest Committee gave the handicaps, basing them on the time made by the various machines in the events of the previous week. This is the first time any attempt has been made to handicap aeroplanes and the table of starts is interesting as affording the only official comparison of the relative speed merits of the different types.

For a race of 10 miles the handicaps were the following:

DRIVER	PLANE	MINUTES
Lieutenant. T. D. Milling	Burgess	3:00
Lieut. H. H. Arnold	Wright	2:45
H. N. Atwood	Burgess	2:40
T. O. M. Sopwith	Burgess (Gnome 50 h. p.)	2:30
G. W. Beatty	Wright	2:30
C. Grahame-White	Grahame-White Baby	2:00
Lieut. T. G. Ellyson	Curtiss (60 h. p.)	1:30
J. A. D. McCurdy	McCurdy (Gnome 50 h. p.)	1:20
Earl Ovington	Bleriot (Indian 50 h. p.)	1:15

Capt. P. Beck	Curtiss (60 h. p.)	1:10
L. Hammond	Baldwin (Hall-Scott 80 h. p.)	50
E. Ely	Curtiss (80 h. p.)	25
T. O. M. Sopwith	Bleriot (70 h. p.)	25
C. Grahame-White	Nieuport (70 h. p.)	Scratch

Nassau Meet Contestants and Their Equipment

BIPLANES.

AVIATOR	MACHINE	MOTOR	H.P.
Harry N. Atwood	Burgess	Wright	30-35
Lieut. H. H. Arnold	Burgess	Wright	30-35
George W. Beatty	Wright	Wright	30-35
Capt. P. W. Beck	Curtiss	Curtiss	80
Helene Dutrieu	H. Farman Baby	Gnome	50
Lieut. T. G. Ellyson	Curtiss	Curtiss	60
Eugene Ely	Curtiss	Curtiss	60
C. Grahame-White	Graham-White Baby	Gnome	50
Lee Hammond	Baldwin	Hall-Scott	80
J. A. D. McCurdy	McCurdy-Willard	Gnome	50
Lieut. T. D. Milling	Burgess	Wright	30-35
T. O. M. Sopwith	Burgess	Gnome	50

MONOPLANES.

G. H. Dyott	Deperdussin (2)	Anzani (2)	25-30 50-60
Earle L. Ovington	Bleriot	Gnome	70
C. Grahame-White	Nieuport	Gnome	70
Andre Houpert	Moisant	Gnome	50
Matilde Moisant	Moisant	Gnome	50
Harriet Quimby	Moisant	Gnome	50
Ignace Seminiouk	Queen	Gnome	50
T. O. M. Sopwith	Bleriot	Gnome	70

Weldon B. Cook made a beautiful flight at Black Diamond, Cal., on Friday, September 29, remaining at a height of 200 feet for 15 minutes and covering a distance of 14 miles. Cook will be one of the attractions at the annual grape festival which takes place at Walnut Creek, October 6 and 7.

THE WRIGHT COMPANY
DAYTON, OHIO

Write Address
"WRIGHT LITERATURE"
to Mr. E. P. Deol, Editor,
Aero, St. Louis, Mo.

October 7, 1912.

EXHIBITION DEPARTMENT
NOT RECORDED, General Manager

Mr. E. Percy Deol, Editor,
Aero,
St. Louis, Mo.

Dear Sir:

I wish to compliment you on the success of your magazine and more especially on the recent issue of October 7, which just reached me.

Your previous newspaper experience has been very valuable to you in this work, as you are better able to understand the requirements of such a magazine, covering broadly as it does the entire aviation situation in this country as well as abroad.

I have noticed in traveling about the country your magazine for sale at all the news-stands. On my visit to Flagstaff, Ariz. my attention was called to your magazine by the request of a gentleman, evidently from the lumber camps, who asked the dealer for, "That dear book on flyin' machines, called Aero?"

Wishing you the continued success you deserve, I am

Very truly yours,
Roy F. Thalmann
Gen'l Mgr. Exhibition Dept.

Directory of Aviators

Fair Secretaries Use AERO When Advertising Exhibitions

I want to compliment you on AERO. It has been of considerable value to me during the last few months in arranging for our meeting.—JOHN T. STINSON, Secretary Missouri State Fair, Sedalia, Mo.

I find the Aviators' Directory of value when planning exhibitions. No person interested in aviation can afford to be without AERO.—A. G. RIGBY, Secretary Buchanan County Fair and Racing Association, Independence, Iowa.

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(Wright Biplane.)

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Convince You.

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Aeroplane.
Or Propeller
to Order.

THE DIARY OF FLIGHT

Continued from page 38

Rochester, Minn.—Thomas McGoe, flew ending his flight with a 1,500 foot glide.

WEDNESDAY, OCTOBER 4.

Brockton, Mass.—Lincoln Beachey made an 11 minute flight in a high wind.

Nassau Boulevard, L. I., N. Y.—Phillips W. Page, Clifford Webster, and Lieutenant Arnold flew.

THURSDAY, OCTOBER 5.

Detroit, Mich.—Frank Coffyn flew from the surface of Lake St. Clare in a Wright biplane equipped with pontoons.

Kinloch, Mo.—Amedee Reyburn flew in his A. A. H. Bleriot type, making a complete circle of the field.

FRIDAY, OCTOBER 6.

Nassau Boulevard, L. I., N. Y.—T. O. M. Sopwith, Dyott, C. Grahame-White, William B. Cline, Lieutenant Arnold, Miss Matilde Moisant, Phillips W. Page, Clifford Webster, Doctor Wildman and Andre Houpert flew.

Salem, Ohio.—Howard W. Gill risked his life by making two exhibition flights in a high wind. The attendance was 1,500.

Monroe, La.—Carl Mourfield flew.

SATURDAY, OCTOBER 7.

Nassau Boulevard, L. I., N. Y.—Phillips W. Page, Clifford Webster, Lieutenant Arnold and Earl L. Ovington.

SUNDAY, OCTOBER 8.

St. Louis, Mo.—Hugh Robinson flew on river in hydroaeroplane. Walter S. Brookins, G. W. Beatty, Andrew Drew and Horace Kearney flew at fairgrounds field.

Kinloch, Mo.—Amedee Reyburn and Tom Benoist flew.

FOREIGN NOTES

Robert Ensault Pelterie, a pioneer of the monoplane with Bleriot, has surprised all those who follow the doings of the various constructors, by turning his attention to biplane construction. The new R. E. P. biplane is really a standard monoplane fuselage fitted with easily detachable biplane wings, set at a fair dihedral.

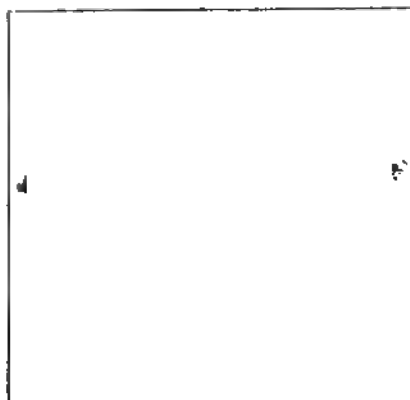
The cause of the change is understood to be the weight lifting requirements of the French army tests. R. E. P. has not by any means lost his faith in the monoplane type for the machines are to be constructed so that monoplane and biplane wings will be interchangeable on the same fuselage in order that within a few moments the machine can be altered from a speed machine to a weight lifting one and vice versa.

Wednesday morning, September 25, Tabuteau left Issy-les-Moulineux on his Gnome-engined Morano monoplane in a terrifically violent wind and flew as far as Lens.

Throughout the journey he had a most trying time for the gusts tossed him hither and thither and as soon as he rose high enough to avoid them his view was obscured by the low-flying clouds.

His flight from Issy to Senlis will be placed to his credit for the Quentin-Bauchart prize and at Senlis he intends to make an attack on the Michelin Cup.

IN 80% of all published accounts of aeroplane accidents, "the motor failed" is given as the cause. In the remaining 20%, "from some unknown cause" is announced. Now, the "unknown cause" can always be traced to the murderous gyroscopic force generated by the motors, so that the danger to flyers can almost entirely be blamed on the motors now employed.



HERE is a motor that actually has more reliability points than any other, and in which there is absolutely no danger from gyroscopic force. A motor that pulls straight ahead, that will not balk and upset you at the first side gust of wind, and that will run just as long as you feed it oil and gasoline.

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OWING to a disagreement of partners, a 50% interest in this great motor is now for sale. The motor is "perfected" to the limit, is ready to market, and there is now a world-wide demand for just such a motor. Its valve action is the acme of simplicity and reliability (both are mechanically operated). It has no carbureters to get out of adjustment—no spark timing to go wrong—no anything that usually puts other motors out of business. It has just cylinders and a frame; starts on a quarter turn and RUNS. It has been thoroughly advertised, and special tools and dies for its manufacture have been provided. To the right party, will consider the sale of a controlling interest.

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The Wrights' verdict on the subject of fabric is a timely warning to aviators. Be safe—use

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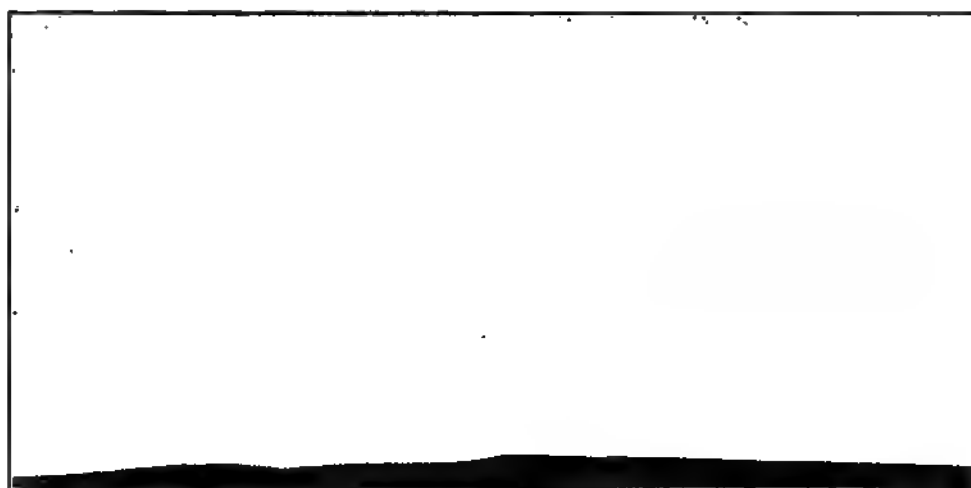
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[Mr. Beachy was trying a Motor of another make at the time of his recent accident.]

St. Louis, Mo., Oct. 6, 1911.

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Gentlemen:—I wish to express my appreciation of the treatment you have accorded me in connection with the purchase made of one of your 4X Motors. In practice it flew the plane owned by Mr. Hilleary Beachy and myself to our entire satisfaction and later when on the road giving exhibitions it flew the plane and got the money which is more than any motor has done for us up to date.

M. A. HEIMANN.

Alma, Neb., Sept. 25, 1911.

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Dear Sirs:—I thought possibly you would like to know what success I had on my western trip.

This to advise that I used my Benoist Biplane equipped with one of your 4X Motors in all my flights and wish to say that the motor was the last to quit in every instance and I am more than pleased with it.

At Alma, Neb., which is 2200 feet above the sea level, I attained a height of 1500 feet, covering a distance of ten miles cross country and at Aurora, Neb., I went up nearly 2000 feet crossing the Republican River, making two complete circles over Ex-Governor Schallenburger residence; in the latter flight I covered a distance of about 18 miles.

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Yours very truly,

(Signed) WILLIAM H. BLEAKLEY

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Vol. II
October

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Edited by E. PERCY NOEL.

RODGERS EXCEEDS LONG FLIGHT RECORD

It appears that the day has been saved, as far as the trans-continental flight is concerned, by C. P. Rodgers, whose dash across the country, covering now more than 1,700 miles, is acknowledged by all to be truly remarkable. The last news of him told of his arriving in Muskogee, Okla., on Sunday, October 15, just 1,705 miles from his starting point in New York City. He has already broken the world's record for cross-country flying formerly held by Henry N. Atwood, and he is said to be determined to cross the continent, although he has no chance to win the Hearst prize.

In his 28 days of flying he has had to combat fearful odds. He has passed through thunder storms and every variety of wind storm, while his landing places were often the worst possible, as has been proven by a number of smashed skids and wings. Once he came down in what appeared to be a perfectly smooth field, only to run into a gully concealed by grass. The damage resulting held him six hours on a fair day. He takes it all as a joke, however, and laughingly refers to the bad luck that appears to be following him on his trip as a hoodoo which will soon lose its evil power.

The trip is being made an advertising arrangement with the Armour Company, of Chicago, a product known as Vin Fizz being advertised by the aeroplane and a crew of bill-posters following it, in every way possible. So much is paid per mile for the flight, the amount getting less as the aviator goes into less populated country.

The following is a table of his time across the continent:
SUNDAY, SEPTEMBER 17.

Town.	Mileage For Time. for Day. Trip.		
Left New York, N. Y.....	4:33 p. m.		
Arrived Middletown, N. Y.....	6:18 p. m.	84	84

MONDAY, SEPTEMBER 18.
Smashed machine in leaving Middletown.

TUESDAY, SEPTEMBER 19.

Repairs.

WEDNESDAY, SEPTEMBER 20.

Repairs.

THURSDAY, SEPTEMBER 21.

Left Middletown, N. Y.....	2:21 p. m.		
Arrived Hancock, N. Y.....	3:39 p. m.	95	179

FRIDAY, SEPTEMBER 22.

Left Hancock, N. Y.....	11:13 a. m.		
Stopped at Throop, Pa., and Warren.			
Arrived Elmira, N. Y.....	5:55 p. m.	110	289

SATURDAY, SEPTEMBER 23.

Left Elmira, N. Y.....	2:18 p. m.		
Arrived Canisteo, N. Y.....	3:25	55	344

SUNDAY, SEPTEMBER 24.

Left Canisteo, N. Y.....	10:00 a. m.		
Arrived Salamanca, N. Y.....	2:45 p. m.	91	435

MONDAY, SEPTEMBER 25.

Repairs.

TUESDAY, SEPTEMBER 26.

Repairs.

WEDNESDAY, SEPTEMBER 27.

Rain.

THURSDAY, SEPTEMBER 28.

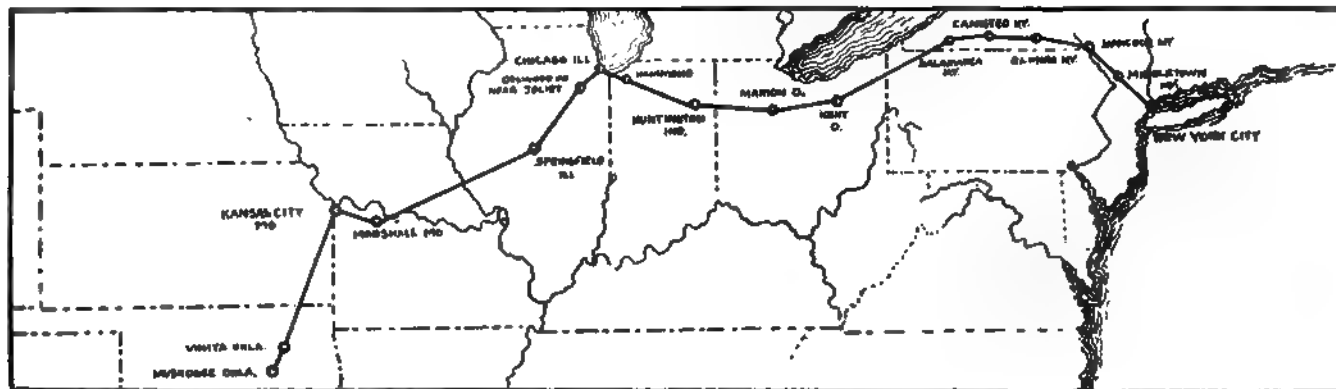
Left Salamanca, N. Y.....	11:30 a. m.		
Arrived Kent, O.....	5:10 p. m.	204	639

FRIDAY, SEPTEMBER 29.

Left Kent, O.....	9:50 a. m.		
Arrived Marion, O.....	12:26 p. m.	113	752

SATURDAY, SEPTEMBER 30.

Left Marion, O.....	8:55 a. m.		
Lost in storm. Stops Geneva.			
Arrived Huntington, Ind.....	4:30 p. m.	36	788



ROUTE FOLLOWED BY RODGERS ON HIS LONG TOUR

SUNDAY, OCTOBER 1.			
Smashed in leaving Huntington, Ind.			
MONDAY, OCTOBER 2.			
Repairs.			
TUESDAY, OCTOBER 3.			
Repairs.			
WEDNESDAY, OCTOBER 4.			
Left Huntington, Ind.....	11:30 a. m.		
Stop at Aldine.			
Arrived Hammond, Ind.....	5:44 p. m.	132	910
THURSDAY, OCTOBER 5.			
Repairs.			
FRIDAY, OCTOBER 6.			
Repairs.			
SATURDAY, OCTOBER 7.			
Left Hammond, Ind.....	11:25 a. m.		
Arrived Chicago, Ill.....	11:59 a. m.		
Left Chicago, Ill.....	4:01 p. m.		
Arrived Delwood Park, Ill.....	5:45 p. m.	62	972
SUNDAY, OCTOBER 8.			
Left Delwood Park, Ill.....	8:25 a. m.		
Arrived Peoria, Ill.....	1:00 p. m.		
Left Peoria, Ill.....	3:00 p. m.		
Arrived Springfield, Ill.....	5:45 p. m.	181	1153
MONDAY, OCTOBER 9.			
Left Springfield, Ill.....	8:35 a. m.		
Stopped at Nebo, Ill., and Thompson, Mo.			
Arrived Marshall, Mo.....	4:31 p. m.	214	1367
TUESDAY, OCTOBER 10.			
Left Marshall, Mo.....	8:32 a. m.		
Arrived Blue Springs, Mo.....	9:50 a. m.		
Left Blue Springs, Mo.....	10:50 a. m.		
Arrived Kansas City, Mo.....	11:35 a. m.	85	1452
WEDNESDAY, OCTOBER 11.			
Delayed in Kansas City.			
THURSDAY, OCTOBER 12.			
Delayed in Kansas City.			
FRIDAY, OCTOBER 13.			
Delayed in Kansas City.			
SATURDAY, OCTOBER 14.			
Left Kansas City, Mo.....	11:55 a. m.		
Arrived Vinita, Kans.....	6:45 p. m.	189	1641
SUNDAY, OCTOBER 15.			
Left Vinita, Kans.....	7:45 a. m.		
Arrived Muskogee, Okla.....	9:15 a. m.	64	1705

BROOKINS ECLIPSES ACCURATE LANDING RECORD

Canton, Ohio, October 10.—Walter Brookins in a Wright, and Harry Atwood in a Burgess-Wright, were the main attractions at the three-day exhibition in connection with the Stark County Fair, September 26 to 29.

Friendly rivalry, coupled with their undisputed ability in the respective machines, resulted in some very interesting work.

On the second day, after both had apparently tired of the continuous circling of the field and their short cross-country jaunts, Atwood approached Brookins with the suggestion that they release several small toy balloons, the honors going to the one who first brought one to the ground by puncturing it with his aeroplane. The balloons were not available at the time, however, and it was at once changed into a challenge for an accurate landing test, without power, from an altitude of 1,000 feet. A four-foot square was marked in the center of the field, and Atwood, who tried first, gained his altitude, shut off his motor, and made a beautiful volplane, but over-ran the mark by 100 feet.

Brookins immediately went into the air, climbed rapidly to the required height, shut his motor off, and after a perfect glide, especially beautiful for its slowness, touched lightly and came to a stop with the two sets of wheels straddling the four-

foot square. The applause from the 40,000 people in the stands continued for many minutes.

There were two slight accidents which partially marred an otherwise perfect exhibition. Eugene Ely, in his 80-horse-power Curtiss, had motor trouble on the lower turn and was forced to make a landing in some very rough ground, damaging his engine section so that he had to retire from the meeting.

Seligman, the Moisant operator, made one very nice flight of four or five minutes, although those who knew how, poorly his motor was running at the time were rather fearful for him. On the last day, he descended rather abruptly and ran into the fence in front of the stands, where he damaged his plane, but was unhurt.

The meeting was noticeable in the number of passengers carried by both Brookins and Atwood, and was marked also by the large number of flights made by these two, there being very little time during the afternoons when at least one of the machines was not in the air.

Andrew Drew took the Wright into the air on the last two days, making two very good flights, including some sharp turns.

CURTISS BIPLANES' STRENGTH TESTED

Hammondsport, N. Y., October 7.—Interesting tests were made at the Curtiss Aeroplane Company's factory this week of the structural strength of planes and trussing. The results show that there is a factor of safety of 10 in the panels or sections of the planes. It was found that the strain on the diagonal wire truss in the end panel ordinarily received a stress of 90 pounds. The tensile strength of the wire is 600 pounds.

An instrument with a pounds scale is shown in an illustration, which was used for measuring wire tension. The second panel when tested was found to have a strain of 176 pounds upon the wire or cable. The machines are no doubled wire throughout, so that the factor of safety is high.

In the engine section the strain was 192 pounds on the diagonal wiring. The wires are doubled here, as elsewhere, and

PANEL LOADED WITH 300 POUNDS OF GRAVEL

when the machine is completely assembled there are wires from the skid to the bottom of the first post out. Besides, when the machine is assembled, the steel tubing which braces the engine section is sufficiently strong to support several thousand pounds.

Panels of the planes, from which the complete planes are assembled, were tested with gravel. An illustration shows a regular panel of surface supported at each corner at the same points at which it is attached to the posts and wire trussing when assembled. The panel was loaded with 300 pounds of gravel without any noticeable change in its form. The normal load on the surface is 75 pounds, when in flight.

Another panel was loaded with gravel to the breaking point. The front beam gave way when the weight had been increased to 760 pounds, showing the factor of safety to be 10.

AT THE CLOSE OF THE DAY—GILL IN THE AIR, PARMELEE STARTING.

HIGH WIND DOES NOT HALT FLYING AT KINLOCH

SUNDAY, OCTOBER 15.

St. Louis, October 14.—The exhibition at Kinloch field opened today of good flying in spite of nasty wind currents. The flying was started by G. W. Beatty, who went out with a young woman passenger, whose name was kept secret and who flew as "the girl in the purple mask." Next Beatty took Fred Essen out for a ride, but his motor died while he was over a corn field north of the aviation grounds and the machine cracked a skid in alighting on the rough ground. Essen clamored for more flying in spite of the accident but Beatty was unable to get the machine up until late in the afternoon when he flew back over the fence onto Kinloch field.

The feature event of the day was a nine mile cross-country race between P. O. Parmelee and Clifford Turpin which was won by Parmelee in better than a mile a minute. The race was from Kinloch field to and from a Jesuit monastery located on the top of a far-away hill. Parmelee completed the course in 8:51 3-5, some six seconds faster than Turpin. While these aviators were away, Howard W. Gill and Andrew Drew indulged in a bomb dropping and accurate landing contest.

The first quick-starting event was won by Turpin with 180 feet. Drew was second with 189 feet. The second quick-starting and bomb-dropping event combined was won by Drew with 179 feet. He won the bomb-dropping contest, dropping two croquet balls within 26 feet of the target on two trials. Gill was second with 29 feet. It was interesting to watch Gill look over his shoulder after dropping a "bomb" to see where it hit the ground.

Drew, in the alighting contest, brought his machine to a stop within 47 feet of the mark. Gill, after twice passing over the spot without landing, finally tried it and got the second money with 58 feet.

Almost the last event of the afternoon was a flight by Dr. Henry Walden in his steel monoplane. The machine, which is original in many respects, was pronounced by a number of people on the field to be very dangerous, but it appeared to fly steadily in the two circles it made during the afternoon.

Dr. Walden made two flights in his monoplane, the second ending in the cornfield north of the grounds. His machine was slightly damaged when the running gear caught on a stack of corn instead of gliding over it, as Walden had calculated to do in landing. The tip of one of the wings was damaged and the rear outriggers were broken. Walden was not even thrown from his seat and his propeller was not even scratched.

Brisk wind from an unfavorable direction, which was puffy and shift, made the afternoon's flying of five aviators at Kinloch field dangerous, and prevented the running off of the scheduled contests, which will be held today instead. An official said every aviator who flew yesterday risked his life more than usual.

Even the inexpert aviation fan could see the airmen were flying in the face of great difficulties, and the crowd of 8,000 waited quietly during one interval of more than half an hour when there was no flying. When they began to encore for another flight they got it, although an aviator had to take long chances to get it.

Andrew Drew was the first aviator off the ground. He started in a wind which the people in the grand stand, sheltered by the trees of the Fordyce place, could not appreciate until they saw the Wright biplane facing the wind and barely moving against its force. This was at 3 p. m. He endeavored to do bomb-dropping, but had his hands full with the levers.

Walter Brookins made the next flight soon after. Drew braved the wind again at 4:05 p. m. At 4:07 Dr. Walden flew for a few hundred yards, landing in front of the grand stand. On his flight Brookins circled around the surrounding country at various altitudes, looking for a comparatively quiet

Continued on page 62

GERMANY'S VICTORY PRESERVES BALLOON CLASSIC

THE START OF THE BALLOONS AT KANSAS CITY

The balloon race for the Gordon-Bennett cup, held October 5, although a defeat for America, has probably saved the international sport from a sudden death. If an American balloon had won in place of the Berlin II of Germany, the Gordon-Bennett cup would have been ours forever and the race would have become a thing of the past, with nothing left to keep up the dying interest in ballooning. As it is, every lover of aerostation should congratulate Hans Gericke and his aide Otto Duncker, for their daring but successful race and decisive victory.

The race this year, although not so long and full of hardship as the contest held in 1910, was fully as dangerous and required a complete knowledge of the science of ballooning. All of the pilots encountered severe storms and were compelled to alight on October 6. There are many who say that the contest was decided more by nature than by any human knowledge. For example, the America II, got away with 35 sacks of ballast and had used but five sacks when it encountered a storm. In a few hours it was necessary to discard all but two sacks of ballast, after which a descent was necessary.

The figures given in the table accompanying this article

need confirmation by accurate measurement, from Maj. Samuel Reber, who has been away from New York, but the victory of Gericke is practically assured and the Aero Club of America is only waiting for the official confirmation to congratulate him and the Deutscher Luftschiffer Verband, already once a winner in the balloon classic. It was thought for some time that Lieut. F. P. Lahm, who finished second in the race, was the winner of the race, for Gericke landed in the midst of a wilderness in Wisconsin and it was 40 hours before he reached a telegraph station.

The wind at the start carried the balloons north and northeast at a great speed. With the coming of the storms, however, the currents varied and nearly all the contestants were blown backward on October 6. Those of the pilots who first became aware of the fact and brought their balloons to earth immediately proved to be the victors. Emile Dubonnet, in the Condor III, stayed in the air more than 27 hours, a longer time than any other contestant, only to come down at last within 240 miles of his starting point. At one time during the contest he was on the edge of the Great Lakes and he might have been the winner had he descended there.

How They Finished

Balloon.	Pilot.	Aide.	Start.	Landing.	Place.	Approximate Distance.	Duration.
			H. M. S.				H. M. S.
Berlin II	Hans Gericke, (Germany)	E. Otto Duncker	5 37 30 P.M.	6.40 A.M. Oct. 6th.	7 miles N. E. of Holcombe, Wis.	470 Miles	12 28 20
Buckeye	Lieut. F. P. Lahm, (America)	J. H. Wade, Jr.	5 43 30 P.M.	2.50 A.M. Oct. 6th.	7 miles W. of Millston, Wis.	370 Miles	8 47 30
Berlin	Lieut. L. Vogt, (Germany)	Martin Schoeller	5 54 00 P.M.	10.10 A.M. Oct. 6th.	2½ miles E. of Austin, Minn.	350 Miles	16 16
Million Population Club	Joan Berry, (America)	P. J. McCullough	5 57 30 P.M.	5.00 P.M. Oct. 6th.	Mason City, Iowa	300 Miles	22 2 30
America II	W. F. Asmann, (America)	J. Cowan Hulbert	5 58 30 P.M.	1.30 A.M. Oct. 6th.	4 miles W. of Emmetsburg, Iowa	250 Miles	7 46 30
Condor III	Emile Dubonnet, (France)	Pierre Dupont	5 58 11 40 P.M.	2.00 P.M. Oct. 6th.	Mingo, Iowa	240 Miles	27 22 20

MARTIN-TYPE QUEEN IS DISTINCTLY NEW

JAMES V. MARTIN READY TO BEGIN A FLIGHT

A new and distinct type of American aeroplane has been built to the order of James V. Martin, the Boston aviator-professor by the Queen Aeroplane Company and is now being tried out at Nassau Boulevard, Long Island. The Martin-type Queen aeroplane as it is called, is not unlike the French Breguet and the English Avro. That is, it is a biplane with the propeller in front and a monoplane fuselage. The new machine has already developed a speed of 70 miles an hour. It is expected to do at least 76 in still air which would make it the fastest aeroplane in the world.

Briefly, the dimensions of the machine are these: Span, 30 feet; fore and aft 29 feet; depth of chord, five feet; camber two and one-half inches. The machine was designed to fly with an angle of incidence of two degrees, but flies without any angle of incidence.

These are the salient features of the new biplane: Non-lifting tail; Farman skids and chassis; pilot's seat aft. The ailerons are so disposed that they float in the stream line when not actuated by the controlling lever. However, when one side is pulled down the other goes up an equal distance. By this means the amount of head resistance will never be more on one side than on the other. In this way, too, lateral stability can be obtained without bringing into use the rudder, thus not infringing upon the chief claim of Wright patents.

The fuselage has been put together with fittings in such a manner that the fore and aft pieces were not drilled through or injured in any way by bolts or screws. The fuselage tapers slightly. A noteworthy feature of the machine is that the fuselage with the tail skids, controls engine, tanks and operator's seat are one unit attached by four clamps to the wing bars of the cellule, which together with the chassis forms another unit. The outer wings can close along the fuselage allowing the whole machine to be driven along the streets by its own power.

The power plant is the heaviest ever put in a biplane. It is a fourteen-cylinder 100 horse power Gnome. The propeller is a Gibson with a pitch of seven feet six inches and a diameter of eight feet six inches.

In speaking of his machine, Martin said to an AERO correspondent:

"The new aeroplane is the embodiment in harmonious combination of the most successful features of all modern heavier-than-air craft. It will be, I think, until something radically different turns up, the last word in aeroplane construction because of the following features:

"It is the world's most efficient machine according to the formula $\frac{W}{V}$, where V is the speed, H is the actual horsepower and W the total weight carried.

"The stability of the aeroplane is inherent, not automatic. Its tendency is towards steady flying, and under normal conditions, the amount of control it requires is almost negligible. Because of the disposition of the balance and the large size of the controls, the

machine answers readily to the least touch of the controlling bar. Upon shutting off the engine, the machine assumes its own gliding angle, which is about four degrees and continues to descend at this remarkably low angle without diminishing its rate of forward progression.

"Despite the fact that the first trials of the machine were made with a 100 horsepower engine, it is notable that not one heavy landing resulted. Should this machine be forced to lose its speed a

INSTALLATION OF THE 100-H. P. GNOME IN THE QUEEN-MARTIN

thousand feet or more in the air, so that it became out of control, the inherent stability is such that the operator could quickly resume control.

"The pilot is seated where nothing could fall on or crush him should a collision or other accident occur. This feature, together with the great strength of the machine's material and design, makes it unquestionably the safest aeroplane in existence.

"The machine is notable for its simplicity and ease of operation, all the necessary movements being already instinctive to most individuals. The operator controls the machine at will with either hand."

AERO ORDNANCE IS NOT YET DANGEROUS

By J. W. MITCHELL

Washington, October 7.—The Army aviation school at College Park probably will resume business on Monday to continue as the weather permits for the remainder of the month. At the end of that time it will be too cold for regular practice here and the War Department will begin to look around for a southern practice field. Probably it will find one about the time the weather is getting good enough to resume operations here.

Anyhow the army has been doing things with an aeroplane gun. The details of this have been carefully guarded for no apparent reason, as Germany is already considerably in advance of any other power in developing the gun for high angle fire. There were a number of them used in the German Army maneuvers this year and no great secret made over them. The ordinance bureau in our War

like a machine gun so that it can be trained quickly without recourse to the screw mechanism which is a part of the Navy mount. The gun is supposed to carry a high explosive shell that will burst into 40 man-killing pieces.

The Navy gun is not surrounded by so much secrecy. It is simply a one-pound gun, on a six-pounder mount, has a prismatic sight and is laid by two hand wheels. It is doubtful whether it will do more than notify visiting aeroplanists that their presence is noted and appreciated. Still we must have aeroplane guns and the ordinance bureaus of both branches of the service are filled with earnest young men anxious to learn.

The army aviators who were absent from College Park all last week were on furlough or leave of absence or whatever is the technical term for it. They attended the aviation meet at Nassau Boulevard in New York and won enough in prizes to keep them in uniforms for the next year.

The amounts credited to them on their return were Lieutenant Milling, \$1,800; Captain Beck, \$1,200 and Lieutenant Arnold, \$1,000. The New York papers which do not like Timothy Woodruff and his crowd were unkind enough to say that the prizes were not all real money. However, this is a hard world, full of mean and suspicious people.

"COLLIER'S LAREDO" SEEN IN NEW JERSEY

Wickatauk, N. J., October 8.—O. G. Simmons has been making flights here in a Wright model B biplane, owned by R. J. Collier. From one to three flights per day has been Simmons' average and on last Tuesday Miss Harriet Quimby visited the field and Simmons made a special flight for her. Today he made two flights, the second with a passenger, William Marner.

The machine is the flyer used by P. O. Parmelee and Lieut. Benjamin Foulois in their long flight along the Mexican border. It was christened "Collier's Laredo" machine after the flight. R. J. Collier intends to give an exhibition here with this machine driven by Simmons, and also to bring A. L. Welsh and Tom Sopwith here to fly.

TWO BLERIOTS APPEAR AT CAVALRY FLAT

Presidio of San Francisco, October 12.—J. S. De Villa and S. L. Boukard are the latest additions to the aviation camp at Cavalry Flat. They are engaged in setting up two Blériot monoplanes which they recently purchased from Clarence Walker and Didier Masson.

De Villa's machine is a XI, being the one which was used by Garros of the International aviators in the City of Mexico. It was also used by Masson in Honolulu. It is equipped with a 30-horsepower Anzani motor and a Hall-Scott propeller.

Boukard's machine is of large type and is equipped with a 30-horsepower Danacq motor and will have a Paterson propeller, after certain necessary repairs are complete. The machine is at the shop at Paterson, on Market street, where the alterations are being made.

Cribblett and Sergeant Seeley of the Signal Corps are making short jumps daily and declare their intention of getting off the ground for extended flights soon. The propeller of their machine was damaged in a fall day before yesterday.

QUALIFIES FOR BALLOON LICENSE

South Framingham, Mass., September 17.—John J. Van Valkenburgh, of this town, to-day made the final flight to qualify him for a spherical balloon pilot's license. With William Van Sleet as pilot and Jay B. Benton, of Boston, as passenger, the party arose from the Pittsfield aerodrome at 11:55 last night, and descended at Auburndale, Queensborough, L. I., at 5:25 this morning, after flying over New York city at an altitude of a mile and being the first spherical balloonists to fly over Long Island sound. In the five and a half hours in the air they covered an air-line distance of 125 miles. Their greatest altitude was 8,500 feet, attained while passing over the sound.

THE NAVY GUN FOR SHOOTING AEROPLANES

Department has just concluded some tests of the new gun at Sandy Hook and according to reports that have been circulating found that they could do very well with box kites and captive balloons where they had a fixed range in at least one dimension. But when it came to practice on drifting balloons the percentage of misses was much larger than the hits, and the drifting balloon is of course by no means so hard to hit as an aeroplane.

One description of the gun has been given that is not official and can be taken with as large an allowance for inaccuracy as desired. It is that it is a three-pounder gun on an extra heavy mount to allow for the intense recoil of high angle fire. The calibre of the gun would agree with another account that has been printed giving it an effective range of 18,000 feet. It is said that the most remarkable feature of the gun is that it is sighted direct and has not a prismatic sight such as has been considered necessary for high angle fire.

The mount is high enough for the gunner to stand under it and sight directly upward, that is to sight as far as 85 degrees. When the gun is lowered the gunner can ascend a flight of concentric steps by which the emplacement mount is surrounded, thus keeping at a convenient position for sighting. The piece has a shoulder mount

THE REAL BEGINNING OF AVIATION

By J. W. MITCHELL

FRAME, ENGINE AND TAIL OF LANGLEY MAN-CARRYING AERODROME

President McKinley was much interested in the work, it being brought to his attention largely by Charles D. Walcott, then director of the Geological Survey. The joint board, consisting of officers of both the Army and Navy, reported that the construction of a man-carrying aerodrome as an engine of war seemed practical and Prof. Langley was asked if he would undertake the work.

Officials of the Smithsonian and friends of Prof. Langley are insistent on the point that it was the government which requested Prof. Langley to take up the work and not he the government. His letter accepting the commission is given, dated December 12, 1898, and attached to the letter is a memorandum stating that he is willing to undertake the work for the government without personal remuneration, that he is to be given a free hand as to hiring assistants and the purchase of material, but that he should have to handle no money, all bills to be paid by the Chief Signal Officer, then General A. W. Greely. On this understanding there was allotted for the work \$50,000.00 by the Board of Ordinance and Fortifications.

From the first it was understood that the chief difficulty would be with the power plant. Steam was impractical in a man-carrying machine. Prof. Langley had said years before that he recognized in the gasoline engine an ideal source of power but it was not sufficiently developed at the time of building the models. However, when the construction of the man-carrying machine was undertaken, a contract was made with an engine builder for a 12 horsepower gasoline engine to weigh not more than 100 pounds. Yet two contractors defaulted on this commission and Prof. Langley at that late day was compelled to start the study of a new branch of engineering and construct the engine in the Smithsonian shops.

This he did with the aid of Charles M. Manley, his faithful assistant. The engine he built developed 52½ horsepower and weighed 207 pounds including 20 pounds of cooling water, radiators and batteries. This stands as a record for weight and power even today. The technical features of the engine are of great interest to the light weight engine constructor, but of little to the layman. It is of interest, however, to know that the engine cylinders were of very thin steel with thin cast iron linings, as cast iron is the one material that gives the proper wearing surface for cylinders. The carburetor also was a development of the work. The Wrights at that time had not demonstrated the efficacy of the mixing valve and Prof. Langley made a carburetor lined with very porous wood that gave a perfect firing mixture even when the engine was running upside down.

There was a vast amount of calculation involved in opposing the cylinders so as to minimize the vibration of the engine, but this was finally settled by using five stationary cylinders in the shape of a five pointed star. It was found after the engine was connected through gears and was running the big propellers that there was practically no vibration noticeable at all.

There was one unintentionally severe test of the resisting power of the engine. While it was running at 700 revolutions the propellers twisted off and thus lightened of all load the engine jumped to 2,000 revolutions and ran at that speed till it was cut off, but even with this severe test it ran steadily and quietly.

Briefly it may be said that all the difficulties met in building the first model were encountered multiplied many fold in building the big machine. It was a marvel of mechanical construction. It weighed but 800 pounds "complete", had 1,040 square feet of supporting surface and a 52 horsepower engine. Considering that a 1,000 pound machine with but 540 feet of surface can fly with a 30 horsepower engine, it may be conceded at the start that the machine was abundantly able to fly.

The statement of Prof. Langley's work clears up one interesting point. No claim is made that flexing wings were tried. The machine was delicately balanced and lateral stability was secured by the use of a slight dihedral angle, the wings being set at 150

MODEL OF BIG MACHINE WITH BIPLANES WHICH WERE NEVER USED

degrees. The weight was carried high, the center of gravity being in line with the center of thrust of the propellers.

This does not infer that Prof. Langley knew nothing of the flexing wing, for he did. In some of the earlier models that flew without an operator, perfect balance in flight was secured by flexing the wing and fastening it in place. Of course a wing could not be flexed when there was no operator on board to flex it, so that there was only the germ of the idea shown in the models. Prof. Langley himself was not known to have claimed wing flexing as a part of his system. This is the point of the Wright invention about which the legal controversy is still proceeding. So far as the printed records show Prof. Langley left it an open point.

The big machine was at last constructed. It was a thing to

(Continued on page 63)

E. PERCY NOEL, Founder-Editor

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The Editor is pleased to consider MS and photographs for publication, but only material that is likely to prove of interest to the readers of Aero. The Editor cannot undertake to answer technical inquiries except in the columns of Aero.

WINTER OPPORTUNITIES

With winter coming and almost here, the opportunities for successful aviation meets or exhibitions in the northern half of this country are rapidly decreasing, and soon the only field open for such work will be the South, California, and the Latin-American countries.

It is probable that there are plenty of opportunities there, where few aeroplanes have been seen, and where a people of a warmer blood are apt to be more impressionable. Already Mexico talks of her army avi-

ators, aero schools and coming meets, while in the smaller republics, where revolutions are not infrequent, great things are expected of aviators accomplishing sudden changes of government.

This winter the southern fields will attract many and no doubt some will make tours into that territory with monetary success, but another field is open to the more serious-minded and those who enter it this winter will probably be remembered longer than the men of the road.

It is the field of experimentation and development. For this work California is considered ideal, but there are many other places that should provide climate equally as good; for example, Florida beaches and any of the most southern states.

While some constructors and aviators regard their work seriously enough always to be on the alert, to be seeking knowledge that will make further development of the aeroplane at the earliest day, the great majority feel that their work is done when the day's flying is over. These men are enjoying their work and producing the results that they desire. The others are working for something bigger.

The aviator who does not intend to go southward for flying engagements this winter has an opportunity to do something more than hibernate. To develop the aeroplane, it is necessary to know the air, to understand cause and effect, by long experience. An aviator learns something almost every time he flies, so for the serious-minded flier who remembers what he learns, there is a great opportunity this winter.

Just as it was necessary for airmen to be killed in order to know the weaknesses or limitations of the aeroplane, so it is necessary for aviators to live to think and tell the possibilities of development.

The aviator Froy, who, flying a Morane monoplane, suffered such a severe accident in the Paris-Rome race, is to be the subject to an unusually attractive benefit that is announced to take place at Juvisy, near Paris on the first of October. Among those who have volunteered their services are Helen, the pilot, who looks like capturing the Michelin Cup, Renaux, Vedrines, Tabuteau, Anzani, Audemars, Gibert, Champel, Lieutenant d'Aiguillon and Bouvier.

Even now the list is by no means complete, for fresh volunteers are coming forward each day. Altogether the meeting, which if the weather proves unsuitable, will be held the following week, looks like being without doubt a most interesting gathering of all the noted French pilots of modern times.

AUTOMATICALLY STABLE MONOPLANE OF WILLIAM SOMMERVILLE.

AVIATOR AND BUILDER

Clarence Ness, of Winona, Minn., who recently purchased a Farman-type machine from a Pacific coast firm, received the flyer last week in a badly damaged condition. He took the machine to Minneapolis for repairs.

The American Aeroplane Supply House has recently sold a Bleriot-type to A. C. Menges of Marion, Ind. The machine was tested during the meet at Nassau boulevard.

The boys of Terre Haute, Ind., are banded together into a Boys' Club, which at present numbers more than 500 members. The club employs 12 trained teachers and a superintendent to direct its activities, which cover many fields. It conducts 12 industrial classes each week, in aeroplane building, shoe cobbling, carpentry, photography, chair-seating, boat building, electricity and "first aid to the injured."

Norlan Snow, of Fort Dodge, Ia., has bought a Farman-type machine. He will begin practicing as soon as it arrives.

Alfred and Leo Wollenhaupt, of 1113 Main street, Dubuque, Ia., have built a perfect working model of the Wright biplane, from planes they saw at a recent exhibition.

E. C. B. Howell, of the Rocky Mountain Aviation Company, has been making successful flights near Denver, Colo., in a monoplane built by Martin Hansen. The company above named will open a school near Denver, with Georges Renel as instructor.

Marshall Geiselman, whose biplane was wrecked at the San Francisco Meet, last January, will soon be in the field with another machine, which is a modified Curtiss-type. He has not decided on the type or make of engine he will install.

Fortney Brothers are completing a biplane at the Ingleside race track, San Francisco, and will make trial flights soon. Their machine is equipped with a four-cylinder Ford automobile engine and Eames chassis.

THE DIARY OF FLIGHT

TUESDAY, OCTOBER 3.

Wickatauk, N. J.—O. G. Simmons flew. Miss Harriet Quimby visited the field and was invited to fly by Simmons, but the flight was postponed when magneto trouble developed.

THURSDAY, OCTOBER 5.

Cleveland, Tenn.—Charles K. Hamilton flew three times under the auspices of the Bradley County Fair. On his final trip he travelled approximately 12 miles.

FRIDAY, OCTOBER 6.

Hempstead, L. I. N. Y.—Andre Houpert flew in a new A. A. B. H. Bleriot type built for A. C. Menges of Marion, Ind. The machine made a 10 minute flight on its first trial.

Wickatauk, N. J.—O. G. Simmons flew.

SATURDAY, OCTOBER 7.

Brockton, Mass.—Lincoln Beachey flew and had a narrow escape when his machine was tilted by a gust. He prevented a fall by putting his whole weight on the shoulder yoke.

SUNDAY, OCTOBER 8.

Terre Haute, Ind.—It is reported that the Johnson brothers made a number of flights in their monoplane. Their practising is being done at a private field, near the grounds.

Wickatauk, N. J.—O. G. Simmons flew twice, remaining in the air 12 and 11 minutes on his first and second flights.

West Bridgewater, Mass.—Harry N. Atwood landed in a swamp here after flying four miles from Brockton. Trouble with his rudder caused him to come down. Nothing was hurt.

Los Angeles, Cal.—Frank Champion flew from Dominguez field to Venice, where he circled the city. He landed after several evolutions over the city and the ocean, on the Venice motordrome. Later in the afternoon he ascended again, went out over the sea, circled the warships in the harbor and returned to Dominguez field.

MONDAY, OCTOBER 9.

Birmingham, Ala.—Lincoln Beachey flew as an attraction at the Alabama State Fair. On one flight he travelled over the city, circling the Brown-Marx and the Empire buildings. Charles K. Hamilton also flew.

TUESDAY, OCTOBER 10.

Adrian, Mich.—James K. Ward flew, attaining more than 5,000 feet altitude on his last flight.

Fort Wayne, Ind.—Arthur Smith, 19 years old, made his first flight in a home made biplane. He followed the railroad tracks from Fort Wayne to New Haven, a short distance away and came to earth in a field some two miles beyond this latter town. Later in the day he made the return trip safely. The total distance covered was about six miles.

WEDNESDAY, OCTOBER 11.

Bloomington, Ind.—Horace Kearny flew, falling into a creek at the close of his flight. He was badly shaken up, but it is thought, not seriously injured. His machine smashed into a tree about 200 yards from the start and he was thrown from it into the stream.

SATURDAY, OCTOBER 14.

Terre Haute, Ind.—Louis Johnson flew in the Johnson brothers monoplane carrying a passenger, Harley Watkins. He circled the field and described a figure 8.

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GERMANY'S VICTORY PRESERVES BALLON CLASSIC

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In winning the race Gericke was obscured from the world for the third time in his life, for his enthusiasm has led him to wander far from civilization twice before. While piloting the Dusseldorf II from St. Louis last year, he was lost in the Canadian woods for several days and again last summer he dared death in the German elimination race to decide who would enter the Gordon-Bennett this fall. He allowed his balloon to drift far out over the North Sea and was out of reach for many days before he finally landed in France.

Had Lieut. Lahm won the contest it would have been his second victory for America, for he landed a Gordon-Bennett cup once before. He too, was compelled to suffer great hardships this year, when his balloon came down in the midst of the flood district in Wisconsin. The balloon landed in a swamp and Lieut. Lahm and his aide, J. H. Wade, suffered severely from the cold. They encountered a terrible storm while over Lake Michigan, and Wade estimates that they were traveling at a speed of 50 miles an hour part of the time.

One of the lessons learned was the fallibility of the load or concentrating ring. The one which John Berry had fitted to his balloon Viking, renamed Million Club, in place of the regular equipment, broke in four places after a landing had been made and Paul McCullough, his aid, had disembarked.

Berry was still in the balloon when the ring cracked with a loud noise on account of the strain of the drag-rope and anchor rope, both of which were holding the balloon in a strong wind. Berry was carried several miles before the basket struck a fence and he was thrown out and rendered unconscious for some time. The ring broke where the guard pins had been inserted.

This is the first instance recorded in this country, at least, of a load ring breaking, and it calls attention to aeronauts the necessity of taking precautions against a catastrophe from such a cause.

HIGH WIND DOES NOT HALT FLYING AT KINLOCH

Continued from page 55

spot in the air, but from the contortions of his machine it was evident he did not find it. He finally landed in front of the grand stands, running to the very feet of the crowd.

Brookins and George W. Beatty, starting about the same time, went out for short flights of several minutes each, both being bothered considerably by the wind, dipping and warping to retain stability. Dr. Walden started his second flight at 4:17 p. m.

At 4:30 p. m., while Albert Elton's Wright was being brought from its hangar, the engine running, the wind crawled under the wings with such force that the machine climbed into the air before the operator realized what was happening and did not come down until nearly thirty minutes later. It flew low over the automobiles, stands and judges, and again high into the air and off across-country.

Drew, hoping to bring back a report on Dr. Walden's land-

ing, went out again at 4:25 p. m., but he had all he could do to watch his machine, and landed after a circle and a half of the field in a wind that almost unnerved him.

Beatty, who did not carry any passengers on account of the wind, flew at 4:28 p. m. and again at 4:49 p. m. Brookins came down at 5:01 p. m., concluding the day's flying.

As soon as the day's flying was over, the gates were thrown open and spectators were allowed to go on the field and inspect the planes. An aviator stood by each plane and explained its mechanism to the curious throngs. The men and women seemed to realize they were being given a treat which was not scheduled in the bills, and made no attempt to touch the machines.

Bernays Johnson, the wireless telephone expert, has offered the Wright team the use of his intercommunicating telephone set. This consists of two helmets with receiver and transmitter, so arranged that aviator and passenger may talk to each other while in the air, despite the noise of the motor. The battery for the telephone is placed between the two seats.

VEDRINES TO FLY ACROSS MEXICO

City of Mexico, October 13.—Winter activity in aviation will commence here next month, if the plans of the Mexican Aviation School and the representatives of the McCurdy-Willard company mature as expected.

J. E. Rickard, representing McCurdy, has just arrived here from Porto Rico, with R. R. Young, and have offered to bring three American aviators here for the Mexican Aero Club Meet, including McCurdy, and probably C. F. Willard, Jake Dougherty and Doc Widdam. These men, with five biplanes, will arrive about November 12, it is stated.

Pierre Vedrines is scheduled to arrive here about December 1, according to the Mexican Aviation School. This school will be inaugurated October 15, with the assistance of his excellency Francisco Leon de la Barra, president of the Republic.

Vedrines will land at Veracruz, the seaport, and from there fly to the City of Mexico, a distance of about 300 miles. On arrival here he will land at the Balvarena field belonging to the school. At the same time an exhibition will be given by Mexican army aviators.

Carlos Roumagnac, manager of the school, is about to bring out the first Mexican aero journal, the name of which, translated, is Sky and Earth.

FOREIGN NOTES

The Circuit of Belgium was begun at Brussels on August 6, with eleven fliers on the ground and four actual starters. The four to get away were Lanser (Deperdussin), Tyck (Bleriot), Prevost (Deperdussin) and Parisot (H. Farman). Tabuteau (Morane) made an attempt to start, but his machine was wrecked after he had been in flight a few minutes. He was not hurt. When the day ended at Mons, Lanser and Tyck led the flying in the order named. Parisot had been compelled to wreck his plane when a group of children rushed in front of it as he attempted to leave the ground after a wayside stop at Fayt. No one was injured. Prevost, the last to start at Brussels, reached Enghein the first day.

On Monday a meet was held at Mons. On Tuesday the competition went on. Lanser and Tyck left for Tournai, the second control. Lanser was delayed by a broken propeller and Tyck won the stage. In the meantime Contenet (Wright) and D'Hespel (Deperdussin) had completed the stage to Mons. Late in the day D'Hespel reached Tournai. The close of the next day found Tyck down at Paelingburg, D'Hespel at Furnes, farther on, and Contenet at Menin, behind them.

Tyck took first place in arriving at Blankenburghe on Thursday, August 10, D'Hespel being penalized for not flying over some of the controls. On the next day high wind kept all the contestants down, but on Saturday Lanser and Contenet reached Blankenburghe. It was all of the next week before the final stages to Antwerp and Brussels were completed because of stormy weather. Numerous stops make the records dull, but the final result of the race was somewhat as follows: First, Tyck; second, Lanser; third, D'Hespel; fourth, Contenet; fifth, Parisot. The race was over when the last three mentioned, together with Tyck, arrived at Brussels on August 23. Lanser reached Brussels on August 22, but his time was slower for the full course.

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Machine at Aero Club Field

FRANKLIN P. SMITH'S MONOPLANE

THE REAL BEGINNING OF AVIATION

Continued from Page 59.

command the envy and respect of a present day aviator. It was a tandem monoplane, the steel tubes of the long main frame being two inches in diameter and one fiftieth of an inch in thickness. The quills of the great wings were modeled on the quills of a Harpy eagle and weight for weight were as strong as their prototype. This by the way is the acme of Nature's construction.

When the trial of the man-carrying machine was made October 3, 1903, five years of heart-breaking work and all the money appropriated for the experiment had been expended. The big machine was the result. When the signal to launch was given, an unnoticed piece of iron on the launching ways caught the machine before it got into the air. Its back was almost broken by the drag of the falling ways beneath it and the machine instead of flying plunged into the water.

The wings and tail were demolished in this accident, but they were replaced as rapidly as possible and although the season was far advanced and the available money all expended, the machine and the houseboat were taken to Washington and there on December 8, in spite of the fact that all the conditions were most unfavorable, there was another trial made. This time none of the observers seemed to know just what happened, but the rear wings and the Pinaud tail were wrecked before the machine got clear of the houseboat. The front end of the machine went up and the whole fell on its back in the river. The operator, Manley, escaped uninjured.

These were the only two attempts at flight made. Funds were exhausted and there had been so much fun made of the experiments

by the daily press that the Board of Ordinance and Fortifications was afraid to allot more money for experiment for fear of jeopardizing the whole of the military appropriation.

The attitude of the newspapers and of Prof. Langley both deserve notice because they were factors in a tragedy. At the time of the Langley experiments flying machines were not taken seriously by the press, especially in this country. This was only natural, seeing that few newspaper men are scientists and there was no such thing as a flying machine till ten years after the experiments were begun. On the other hand Prof. Langley was a man who knew nothing of newspapers. He moved in a different world, and his nature which was sensitive and retiring was mistaken by most of the reporters thrown in contact with him for reserve and indifference.

There are a good many reminiscences of him among the older employees of the Smithsonian showing the kindness of his disposition. But there is in the Institution a monument to this side of his nature. It is the Children's Room. In this room are gathered a small but effective collection of birds, reptiles and insects grouped so as to be of especial interest to children. It would take a scientist of wide attainments and with a peculiar insight into child nature to cull such a collection from the vast stores of the Institution. All the labels are in clear and simple English and the only one on which a Latin name is used is that attached to a tiny humming bird with a name fourteen letters long and a joking comment that a child would appreciate on the bigness of the name and the smallness of the bird.

It is not generally known either that among the few popular books Prof. Langley found time to write almost all are especially for the benefit of children.

Reporters who were sent to the Smithsonian in the old days with orders to "get stories" about the flying machine experiments seldom saw Prof. Langley himself. They usually did succeed in getting a cold turn down that sent them away sore and resentful. It was only natural therefore when the experiments with the big machine had to be carried on in the open that the reporters rather welcomed than otherwise a chance to chronicle an apparent failure. But the most harm was not done there. Editorial writers whom the public finds it hard to differentiate from reporters, took easy flings at the Langley experiments, it being a subject that nobody knew anything about and that lent itself readily to persiflage.

Probably there was little of this stuff written in malice. Probably there were few writers who honored their own productions with a second thought. But to Prof. Langley, living in a different sphere, each of these light criticisms seemed the outcome of deep personal animosity. It had its practical effect, too, in cutting off further government appropriations, and the man who had opened the door to this new world of mechanical flight, found himself alone and discredited in his own country.

The only recognition in the last days that he spent here was contained in resolutions adopted by the Aero Club of America, thanking him for his pioneer work. These were forwarded him during his last sickness and reached him but a few days before he died.

THE END

COLLEGES HOLD FIRST FALL MEET

Medford, Mass., October 11.—The first fall meeting of the Tufts College Aero Club was held last evening, the principal feature being the election of officers and the announcement of the fall plans. The following officers were elected: President, E. P. Bugbee, of Methuen; vice-president, Frank P. Fairbanks, of Passaic, N. J.; secretary, Stanley H. Smith, of Dedham; and treasurer, Joseph A. French, of Waltham.

A course of lectures will be given during the winter, among the speakers already signifying their consent being James V. Martin, vice-president of the Harvard Aeronautical Society and a well-known aviator; and President E. N. Fales of the Massachusetts Institute of Technology Aero Club.

President Bugbee presented the club with the trophy won by himself at the May intercollegiate glider meet at Atlantic, when the Tufts II won first prize in the mechanically controlled division by a glide of 535 feet. The Tufts II, broken soon after the meet, has been repaired and will be used for experiments next month.

Johnson Brothers, of Sunnydale, Cal., who have been making experiments with an original monoplane at Hempstead Plains, N. Y., have returned to San Francisco, where they are engaged in perfecting a model of half size for experimental work. Peterson is doing the work.

AERO MART

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ALL WANTS 1c A FOR SALE and 2c A
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If desired, replies may be received at the offices of the Aero Publication Company. Advertisers wishing to take advantage of this convenience will pay 10 cents extra for registration, to cover the cost of forwarding replies.

SITUATIONS WANTED.

AVIATOR-PILOT—Experienced aviator, licensed by the Aero Club of France and of the Bleriot School of Aviation; experienced mechanic, seeks engagements for meets, exhibitions, across-country flights, or as pilot with a school and aeroplane factory; can handle Farman and Curtiss biplanes, also. Many flights in America. Best references. I. Semenkouk, 120 W. Ninety-eighth St., New York, N. Y.

AVIATOR—Young man, age 18, anxious to become aviator. Will enter meets if someone will furnish aeroplane. Best references. Address Louis Fenouillet, 132 West Forty-seventh St., New York, N. Y.

GNOME EXPERT—Gentleman requires situation as Gnome engine expert; thoroughly qualified. Salary required 20 pounds (\$100) per month and expenses. Detailed particulars from C. W. B., 52 Monmouth Rd., Bishopston, Bristol, England.

MISCELLANEOUS WANTS.

AEROPLANE WANTED—Curtiss type; will furnish eight-cylinder motor for it; Curtiss motor. Cecil S. Payne, Sedalia, Mo.

BIPLANE—Wanted perfect biplane or monoplane. Must have flown or standard make. Flyable. Full details and photo first letter. Box 145, care Aero, St. Louis.

ENGINEER—Would like to install a 60-horsepower Elbridge engine with a complete power plant in a standard flying machine. Write for particulars. Carl Chapman, 421 Oak St., Kalamazoo, Mich.

MOEDEBECK HANDBOOK—Wanted a copy of Moedebeck's Handbook. Will pay \$2 for second-hand copy in good condition. Box 200, care Aero, St. Louis.

MOTOR—Wanted, good aero motor. State make, cost price, lowest cash offer immediate acceptance, horsepower, photo if possible, how long used, etc. Box 148, care Aero, St. Louis.

MOTOR—Wanted a good 50-60-horsepower motor of standard design. State lowest price and condition. Weeks, 2917 Evanston Ave., Chicago.

FOR SALE.

AIRCRAFT SUPPLIES—Aeroplanes for sale and built to order. Submit your designs and get our prices before going further. Propellers, wheels and fittings made to order. The Eaton Brothers Factory, 1708 Echo Park Ave., Los Angeles, Cal.

AIRCRAFT SUPPLIES—Aeroplanes for sale and built to order; propellers, models and model stock; Chicago engines; flying models. Chicago Aero Works, H. S. Renton, Prop. 164 N. Wabash Ave., Chicago, Ill.

B. & W. MONOPLANE 26 by 26 feet, 25 horsepower, complete \$850.00. B. & W. turnbuckles spoke or Bleriot type \$.12 each, \$11.00 per 100, tested for 1200 pounds. We have one used monoplane at \$450.00. Particulars and photos on request. Burgess-Wiseman Mfg. Co., 1383 E. Ninety-second St., Cleveland, Ohio.

BAMBOO—Special grades for aeronautic work. Skids, flex-elastic, fibre, strong as steel and lighter than wood. Reed, rattan, split bamboo for models. Deltour, 49 Sixth Ave., New York City.

BIPLANE GLIDER—Has been 80 feet high. Good as new. Turnbuckles and sockets. 180 square feet surface. Send for photo. \$20 cash. The Model Shop, 1932 Riverdale St., Chicopee, Mass.

BIPLANE—One biplane, Farman-type, with Curtiss eight-cylinder 40-horsepower engine. Has been in air 15 minutes. Will sacrifice for cash, or will sell separately. Also one two-cylinder water-cooled 28-horsepower engine for \$85.00. Has flown Curtiss-type. Cecil S. Payne, Sedalia, Mo.

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ENTHUSIASTS—Send for Set No. 1A, containing six perfect photographs of prominent aviators, aeroplanes, flights, etc., with interesting description. 25 cents. International Photo Specialty Co., Revere, Mass.

MONOPLANE—Dandy monoplane, perfect flyer. Cheap. Just the machine for party with small cash. Success is yours with this machine. Box 147, care Aero, St. Louis.

PARTS—Attention, aviators! Our new price-list of parts, accessories, wire and cable, just out. Prices reasonable. Complete line. Aero Supply Company, Boston, Mass.

POCKET AMMETERS—One thousand Guaranteed \$2.00 pocket ammeters for testing batteries. 25 cents post paid. Chamols leather case with each. Stamps taken. Automobile Repair Company, 521-523 West 144th St., New York.

PROPELLER—Best grade walnut propeller built by Chelsea Aero Co. 8 feet 6 inches diameter, 6 feet 6 inches pitch. In excellent condition. Used only for six hours testing engine thrust. Will accept any reasonable offer. For particulars A. V. Reyburn, Jr., 5305 Delmar Blvd., St. Louis, Mo.

SANTOS-DUMONT—A perfect Santos-Dumont monoplane, 30-horsepower, fitted with pontoons for water and wheels for land. Guaranteed to fly. Just the thing for an amateur. Will demonstrate to purchaser or send photo while in flight. Reason for selling, buying two-passenger machine. Price at Akron, Ohio, \$800. Jno. R. Gammeter, Akron, Ohio.

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HAVE MONEY to build 100-horsepower motor 200 pounds, but need financier to build monoplane and to take orders. This is no experimental proposition. Practical Man, care Aero, New York.

PARTNER—Half-interest in successful exhibition company and aviation school. Partner must have at least \$10,000 and become actively identified with concern. Box 149, care Aero, St. Louis.

PARTNER wanted to take interest in established aeroplane parts manufacturing business. Concern now on a paying basis. Box 150, care Aero, St. Louis.

MODELS AND MODEL SUPPLIES.

COMPLETE PLAN drawn to scale with full instructions for building the only Wright three-foot biplane model that positively flies; 25 cents post paid. Drawing and directions for three-foot model Bleriot monoplane, 15 cents. Stamp brings most complete, interesting and instructive catalogue published. Ideal Aeroplane and Supply Company, 84½ West Broadway, New York, N. Y.

MOTOR—The Aeroduster Tube Motor for model aeroplanes. Constructed from black walnut, is absolutely unbreakable. Price, 30-inch, \$2.25; 36-inch, \$2.50; furnished for any size model. Aeroduster Construction Company, 3751 Indiana Avenue, Chicago. Stamp brings catalogue of complete model supplies.

MODEL PROPELLERS—6-inch 30 cents, 10 cents each additional inch; ball-bearing shafts 30 cents, reed and rubber 1 cent per foot. Catalogue for stamp. Short-Canniff Co., Marlboro, N. Y.

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LEARN to fly in two weeks. Students operating biplanes alone the first day; flying daily, weather permitting. Competent instructors in attendance. Aeroplane construction; also care and motor knowledge free. No bond required for breakage, terms very reasonable; write for terms. Aviators and aeroplanes supplied for exhibitions. Francise Americaline Co., Mineola, L. I., N. Y.



1,005,127, October 10, 1911.—Osmond T. Belcher, Los Angeles, Cal. A flying machine comprising a frame, a pair of supporting planes mounted thereon one above the other, the lower plane projecting beyond the upper plane at both its ends, rigid lateral equilibrium planes pivoted along their forward edges to the frame in the line of extension of the forward edge of the upper supporting plane and over the end portions of the lower supporting plane, the equilibrium planes adapted to normally form continuations of the upper supporting plane, and means to move the equilibrium planes about their pivoted edges.

1,005,205, October 10, 1911.—Carl Hartmann, Woodside, N. Y. An aeroplane embodying two sets of parallel planes, said sets being located one above the other and the planes of each set being in stepped relation to one another, corresponding planes of said stepped sets being, further, closest to one another at the ends of the aeroplane.

1,005,232, October 10, 1911.—Christian F. Kohlruss, Augusta, Ga. A flying machine comprising a central and side plane, a car below the central plane, and supported by all the planes, a rudder at each end of the central plane, mounted on a horizontal axis transverse to the plane, a rudder below each of the first-named rudders and mounted for swinging movement on a vertical axis approximately perpendicular to the center of the axis of the adjacent first-named rudder, means for simultaneously moving the first-named rudders in the same direction, and means for simultaneously moving the last-named rudders in the same direction.

1,005,258, October 10, 1911.—Henry W. Mattoni, New York, N. Y. A flying machine embodying a main plane, supplemental planes pivotally mounted on the main plane, fingers carried by said supplemental planes, springs for moving said

supplemental planes in an operated position, and a rotatable arm for engaging said fingers for holding said supplemental planes in an inoperative position.

1,005,272, October 10, 1911.—Charles R. Mitchell, San Diego, Cal. An airship including a tilting plane, a yoke spanning said plane, a rod pivoted in said yoke, a link connection between one end of said rod and one end of said plane, a second yoke, means for pivotally mounting said yoke, a shaft journaled in said second yoke, a drum upon said shaft, a link connection between one end of said shaft and one end of said rod, a horizontally swinging rudder, a cable mounted upon said drum and connected with said horizontally swinging rudder, and a hand wheel mounted upon said shaft, the connection between the last named link and the end of said shaft being such as to permit rotation of said shaft without actuating said link.

1,005,327, October 10, 1911.—John C. Schleicher, Mount Vernon, N. Y. An airship having superposed planes spaced apart, and front and rear wings fulcrumed between said planes at their ends and adapted to be turned on their fulcrums and close the passage between said planes.

1,005,381, October 10, 1911.—Samuel Weber, Ossining, N. Y. A flying machine composed of a main frame provided with top and bottom members forming main aeroplanes, a central forwardly and backwardly ranging bridge work, outwardly directed supports connected with the front and back portions of the main frame, transversely ranging supplemental aeroplanes movably mounted in said supports, other forwardly and backwardly directed supports placed centrally of the main frame and between the first named supports, rudders mounted in said last named supports, forwardly and backwardly ranging propelling shafts mounted at the opposite sides of the bridge-work and provided with propellers, means for operating said propelled shafts, and means for operating said rudders.

1,005,569, October 10, 1911.—Auld Weinberg De Meir, Providence, R. I. A garment for aeronauts comprising a body provided with interior air cells and exterior air chambers, each of said air chambers being open at the bottom and having a vent at the top and adapted to perform the function of a parachute.

1,005,609, October 10, 1911.—William A. Crawford-Frost, Baltimore, Md. A supporting plane provided with openings, and a parachute formed of walls adapted to fold or collapse upon the top of the plane and close said openings, and to open upwardly to extended position, said parachute being provided with vent aperture.

1,005,646, October 10, 1911.—Carl V. Johnson, Goldfield, Nev. An airship comprising a main frame, a frame secured above the main frame and having a forward and rearward extension, the said upper frame being provided near its middle portion with supporting planes elongated transversely with respect to the direction of advance of the ship and increasing in length progressively upwardly, said planes having movable tips attached to the ends thereof and constituting extensions of said planes, said airship having rudders, means for normally holding said rudders in a front and rear direction, means for limiting the inward movement of the rudders, and means for simultaneously regulating said tips and said rudders.

1,005,759, October 10, 1911.—Willis I. Wood, Glenhaven, Wis. A combined wind-shield and prow for air-craft.

BALLOON BOSTON TRAVELS TO NEW JERSEY

Brockton, Mass., October 7.—Lincoln Beachey and his Curtiss biplane and Harry N. Atwood and his Burgess Model F were the feature attractions of the four days' fair closing here today. Beachey made flights every day, while Atwood made three flights during the fair, declaring he would not depart from his policy of flying in good weather only.

Beachey had a narrow escape from accident yesterday. He was flying at an altitude of about 200 feet, when a gust of wind hit his supporting planes and tipped the biplane to a bad angle. Beachey tried to throw his shoulder-yoke far enough to bring the ailerons into sufficient play, but the machine still swung farther over. Finally Beachey swung his foot off the accelerator and threw his whole weight on the yoke, bringing his machine into equilibrium just as his mechanicians ran to pick him up. After alighting perfectly he declared it was his narrowest escape from a bad fall.

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Built to carry two people comfortably, and either one can operate the machine.

The standard B machine, used by both the Army and Navy, continues to hold all American Records for American-made Aeroplanes.

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Charging only reasonable amount, we assume all risk of breakage, and there are no "extras" to run up the cost. The training consists entirely of actual flying in the air with an instructor. Using duplicate levers, the pupil learns to fly instinctively without risk.

Over one thousand flights have been made at our schools this year. While we strongly recommend instruction at our permanently equipped camp at Dayton, training can be secured at New York Aero Club's Aerodrome at Nassau Boulevard, Long Island.

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Dayton, Ohio

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Cable Address "AEROWEK"

Publishers of Aero
ST. LOUIS

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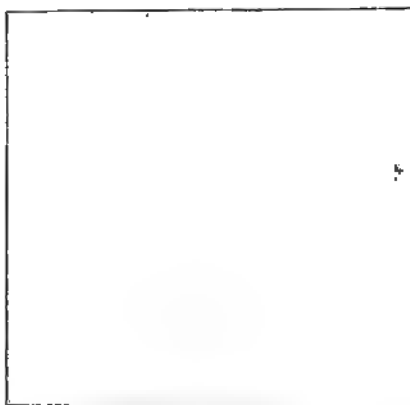
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OWING to a disagreement of partners, a 50% interest in this great motor is now for sale. The motor is "perfected" to the limit, is ready to market, and there is now a world-wide demand for just such a motor. Its valve action is the acme of simplicity and reliability (both are mechanically operated). It has no carbureters to get out of adjustment—no spark timing to go wrong—no anything that usually puts other motors out of business. It has just cylinders and a frame; starts on a quarter turn and RUNS. It has been thoroughly advertised, and special tools and dies for its manufacture have been provided. To the right party, will consider the sale of a controlling interest.

Address, BERT A. HALL, 321 South Wabash Avenue, Chicago

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Our machines flown by Amedee V. Rayburn, Jr., St. Louis, Mo.; Willie Haupt, Phila., Pa.; Judge J. A. Brackett, Norton, Mass.; A. C. Menges, of Marion, Ind., and others, all using duplicates of the

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Edited by E. PERCY NOEL

GILL BREAKS AMERICAN ENDURANCE RECORD

St. Louis, October 23.—Lack of any competition for prizes or percentage may have been responsible for poor attendance at the exhibition at Kinloch field, under the joint management of the Wright company and the Pioneer Aviation Company, which ended yesterday, but bad weather on three days played an important part in the lack of success from the box-office standpoint. Despite the small attendance on all the week days and the brisk winds on almost every other day, the aviators participating gave the people more than their money's worth.

On Thursday Howard Gill, in a year-old Wright, which had once been fitted with a front elevator, went out a little before 1 p. m. and stayed in the air until he had clinched the American endurance record, with a total flying time of 4 hours 16 minutes 35 seconds, bettering the record made by the late St. Croix Johnstone at Nassau boulevard aerodrome by a quarter of an hour.

Although it was growing dark rapidly when he landed after 5 p. m., Gill would have remained longer in the air if he had not been signalled down, he thought, by Roy Knabenshue, that ever watchful exhibition manager of the Wright company. Gill had intended to remain in the air five hours.

It is well that he descended when he did, for the fabric on the old aeroplane was stretched so badly that it hung like drapery on the planes and the aviator was chilled to the bone by the long gruel with a stiff October breeze with a touch of frost in it. Gill, who climbed up into the 7,000-foot

region wearing a thin summer suit at the Chicago meet and came down trembling with the cold, was convinced by the long flight of the need of wearing a special wind-warding costume when flying long in chilly weather.

One of the most significant features of the flight was the fact that although Gill was tired when he landed, he stepped from his machine without showing any stiffness of muscles and walked across the field with his accustomed stride, laughing and joking unconcernedly. This in spite of the fact that the wind for the better part of the flight kept the anemometer in the neighborhood of 15 miles an hour, sometimes higher.

On the same day Phil Parmelee, who on Wednesday climbed to the 7,500-foot level and came back to earth in 35 minutes elapsed time, went out after the world's altitude record, after changing the chain sprockets. His friends were glad to see him return after being gone about half an hour, for at 2,000 feet he passed into a great cloud of an approaching storm and disappeared.

The danger of being lost above the cloud banks brought Parmelee down with the barograph showing 4,500 feet. Until he began to descend, all that the aviator could see was the sun, the dense clouds below him and the purple shadow of the Model EX Wright upon them. He knew his direction by the sun, but his location was a mystery. The possibility of being forced to land he knew not where brought the sensible aviator back to earth.

Dr. Henry Walden in his original all-American monoplane

out himself. His first flight occurred before the other aviators got into the air and came as a complete surprise to everyone at the grounds. Dr. Walden ended the day with an 18-minute flight in his monoplane, providing a pleasant surprise for those who waited.

Turpin's flying which shows the effect of his almost daily exhibition experience of the past six weeks has become excellent. Andrew Drew, in his work every day, except the last day of the meet, when he was not flying, showed the remarkable results of a long tuition with Walter Brookins as preceptor. He carried many passengers during the week and was often the first man in the air, whether the wind was brisk or not. George Beatty, who did considerable passenger-carrying flew in his customary excellent style.

Praise is due to Hugo Miller for field management, and to

GEORGE BEATTY

with four-cylinder Hall-Scott motor, encountered difficulties early in the week and was twice forced to land in a cornfield, but on Sunday, the final day of the tournament, he aroused the crowd to a high pitch of enthusiasm by a beautiful 18-minute flight at altitudes varying from 300 to 600 feet.

The most attractive part of his flight to the expert view was the stability of his machine. He said after landing that he had not used the ailerons once excepting when banking on turns, yet the swift little monoplane cut its way through the air without ever wavering laterally or longitudinally.

Concluding his flight which occupied for the most part a 12-mile circle around St. Louis county with Kinloch field as the center, Dr. Walden came down the field at full speed and steering straight for the grand stands, stopped suddenly at the very feet of the spectators.

The crowds, after last Sunday's heavy gathering, were very light during the early part of the week. The work the aviators were able to do was very good, considering the wind throughout the week. On Monday, Howard W. Gill, P. O. Parmelee, Albert Elton, Andrew Drew and Clifford Turpin all made flights. On Tuesday the wind was stronger, and the entertaining of the crowds was left to the same men. On Wednesday the poor weather continued. The work on Thursday, October 19, however, was well worthy of comment.

Gill started the ball rolling with his American duration record flight, which began early in the afternoon. While he was in the air Parmelee and the other Wright fliers entertained the crowd with flights, making the exhibition for the day decidedly interesting. This was destined to be the next to the last day of the exhibition, however, for on Friday and Saturday, cold, soaking rains fell, causing the flights to be declared off early in the forenoon on both days.

On Sunday, the people not only saw a good bill of flying, but were entertained with semi-military maneuvers, as well. Battery A of the National Guard of Missouri, was on the field and its members indulged in a mock skirmish with Phil Parmelee, wasting several rounds of blank cartridges and being "shelled" with flour-filled bombs, much to the amusement of the spectators. Passenger flights were made early in the afternoon, G. W. Beatty going out with C. H. Fuller, of Oakland, Cal., while Parmelee took F. E. Osmus, of Binghamton, N. Y., for a ride.

Twice during the afternoon A. B. Lambert left his duties as master of ceremonies to someone else and took a plane

ALBERT ELTON AND WALTER BROOKINS AT ST. LOUIS

George Holton for his work at the gates and stands, while Charles P. Senter, a prominent St. Louisan voluntarily gave his services frequently as recorder and timer. Lewis Splindler also helped.

COOK LANDS SAFELY IN LAKE

Oakland, Cal., October 12.—Weldon B. Cook entertained a large crowd of spectators who attended the Columbus Day celebration here today, with a flight in his Curtiss-type biplane, making a flight from Alameda and landing on Adams Point in Lake Merritt, a distance of four miles. Cook made several circles of the lake, and again landed on the point, giving the spectators a chance to look over his machine.

In attempting to start back to his hangar at Alameda, Cook underestimated the speed with which his machine was going and instead of raising from the ground was immersed in the waters of the lake. He was rescued uninjured, but his biplane was so soaked with water that he was compelled to take it back on a wagon. Cook flies a homemade machine equipped with an Elbridge engine.

STORMY DAYS RETARD WORK AT NASSAU

Nassau Boulevard, Long Island, October 23.—Owing to the almost daily rainstorms, there was hardly any flying during the past week at the joint aerodrome of the Aero Club of America and New York. When it wasn't raining in torrents, stiff winds blew in from the Atlantic, and the hardest of aviators deemed it wiser to keep their machines in the hangars. Monday was the only day on which it was at all safe to venture up. The morning was foggy, but late in the afternoon the weather cleared up somewhat and Dyott in his Deperdussin, Page and Webster in their Burgess-Wright, A. L. Welsh in his Wright, Fred Schneider in his own biplane, D. Cline in Dr. Northwood's headless biplane, and James V. Martin in his Martin-type Queen aeroplane, each made several flights. Dyott and Martin were the only two to venture outside the confines of the aerodrome. Martin flew over the outskirts of Garden City.

There was no more flying until Thursday, when Claude Grahame-White went up for half an hour in his baby biplane in which he had installed the Hendee rotary motor, with which Earle L. Ovington was to have flown to Los Angeles. The English aviator expressed himself as being very pleased with the "American Gnome," and hopes soon to be able to give the new engine a two-hour trip in the air.

Miss Blanche Scott has at last an aeroplane. Howard Dietz has built her a Curtiss-type biplane, which is to be fitted with a 50-horsepower Kirkham motor, and Miss Scott hopes to be able to resume her flying in a few days. Miss Scott took her first lesson from Capt. Baldwin, but after a few weeks the veteran aeronaut and aviator decided that piloting an aeroplane was no profession for a woman, and refused to be further responsible for Miss Scott to her mother.

MOISANT PUPILS QUALIFY

Hempstead, Long Island, October 15.—The past week has been a busy one at the Moisant Aviation School on Hempstead Plains. Nearly every morning and afternoon Andre Houpert had out his pupils, rolling or making short straight-away flights. On Tuesday Miss Matilde Moisant took a short cross-country trip in her monoplane.

The week-end will be one to be remembered by the Moisant School, for on Saturday and Sunday three pupils won their pilots' licenses. On Saturday afternoon Harold Kantner, of Meadville, Pa., and Mortimer F. Bates went up for their certificates. Kantner was the first to go up. He drove a 50-horsepower Gnome-Moisant-Bleriot. Before he had finished the requisite number of "lights," Bates started in a 35-horsepower Anzani-Moisant-Bleriot. For a time, therefore, two pupils were in the air at the same time, flying for their brevets. The watchers were G. F. Campbell Wood, secretary of the Aero Club of America, and Philip W. Wilcox. Kantner came through successfully, but Bates had to descend before getting through, owing to the approaching darkness.

Bates, however, was up early this, Sunday, morning, with Captain G. W. MacKay, of Company A, Signal Corps, Michigan. Both Bates and MacKay made faultless flights and will get their licenses. Captain MacKay is the only officer in this country who flies a monoplane. He was sent to the Moisant School at the instance of the governor of Michigan. When he gets back home he is going to undertake a number of wireless experiments. His company has had two automobiles placed at its disposal and these cars are to be fitted with apparatus for receiving and sending.

In the afternoon Houpert paid a flying visit to the Nassau Aerodrome. From the Aeronautical Society's sheds at the other end of the field, Clifton O. Hadley took out his Curtiss-type machine and, after making several circuits of the field, also took a little trip to the Nassau Aerodrome.

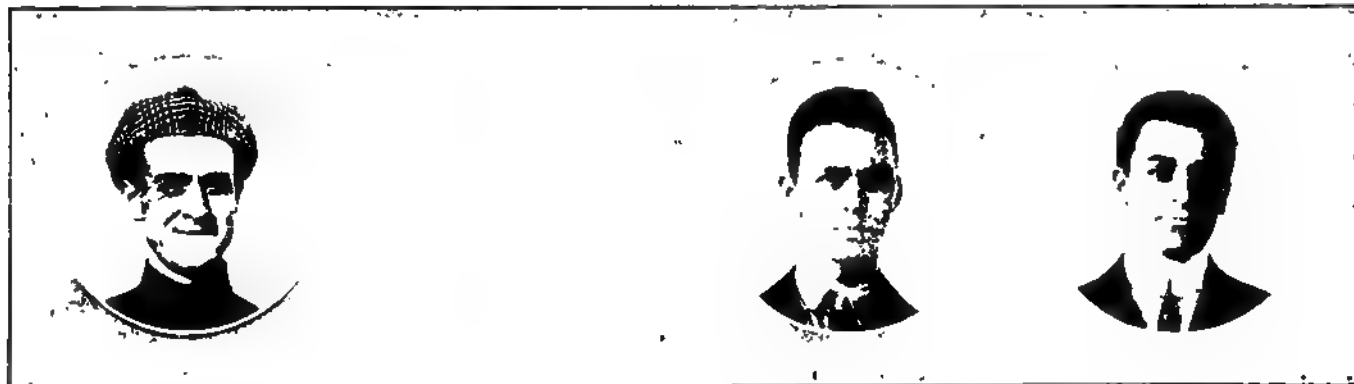
WELSH OPENS WRIGHT SCHOOL

Nassau Boulevard Aerodrome, Long Island, N. Y., October 14.—The past week has been rather a busy one at the joint flying field of the Aero Club of America and the Aero Club of New York. In the early part of the week Earle L. Ovington, who had been advertised to fly from New York to Los Angeles, was the center of interest. Wednesday, the day Ovington abandoned his proposed trip, A. L. Welsh arrived on the scene to reopen the Wright school.

To begin at the commencement of the week, Sunday was an exciting day. The local sheriff was on hand with a large force of deputies to arrest any aviator who broke the Sabbath by taking a machine into the air. The threats of the representatives of the law caused a great deal of resentment along Hangar alley. Miss Matilde Moisant said she wasn't afraid of the sheriff and took her monoplane out. Instead of returning to Nassau boulevard to be arrested, she sailed away to the Moisant school on Hempstead Plains. There, however, two deputy sheriffs, who had gone over in an automobile, were waiting to take her into custody. Alfred J. Moisant threatened to shoot anybody who touched his sister and, while he and his assistants argued with the sheriffs, Miss Moisant was spirited away in the automobile of Yves de Villers. While all this was going on on Hempstead Plains, Ovington had taken out his Queen monoplane and to escape the sheriffs, had landed some distance from the aerodrome. Sheriff De Mott sent a member of his staff over to Justice Gitten's court at Hempstead to obtain warrants for the arrest of both Ovington and Miss Moisant. Justice Gittens, however, refused to issue warrants, and said that he could not see where any violation of the law had been shown.

Monday, October 9, was a good flying day. Phillips W. Page and Clifford Webster were out bright and early in their Burgess-Wright. During the morning Webster took up Miss Blanche Scott for a ride and Welsh carried Page in the latter's machine and gave him a sort of post-graduate course,

Moisant Graduates Who Won Licenses



CAPT. GEORGE MACKAY

MORTIMER F. BATES

JESSE SELIGMAN

HAROLD KANTNER

finishing up with some steep banking, a spiral glide and a very precipitous volplane. In the afternoon T. O. M. Sopwith met with a mishap. He was carrying Nelson Doubleday in his Gnome-driven Burgess-Wright, when a bolt worked loose on his single Farman control. Sopwith was rendered helpless. Fortunately, the machine was not many feet from the ground, so that in the fall that followed very little damage was done.

There was even more activity on Tuesday, October 10. Page, who comes from Boston, and Webster, who hails from Haverhill, Mass., flew successfully for their pilot's licenses. Webster at different times took lessons from Atwood, Bonney, Gill, and Lieutenants Arnold and Milling. Page took his lessons from A. L. Welsh and Orville Wright. George Dyott, who flies the Deperdussin monoplane, met with an accident while making a flight with a passenger. Dyott had hardly left the ground when he fouled a flagless pole that had been put up for the qualification flights of Page and Webster. Dyott came down and slightly damaged both wings. Dyott complained bitterly of the carelessness somewhere that was responsible for the pole being left out on the field. While writing of this, some mention might be made of the dangerous practice of flying both ways round the course. Unless a rule is made compelling the aviators to at all times fly contrariwise to the clock, there will sooner or later be a bad accident here. Ovington was out all day tinkering with his machine.

The weather was, rather foggy all day on Wednesday, October 11, but there was, nevertheless, considerable flying. Ovington was out first with his "trans-continental monoplane." He had promised to really start out for Los Angeles this day. But Ovington did not get very far. He had only been off the ground a few seconds when he dropped and badly hurt the machine. Later in the day Ovington bade farewell to everybody on the field, saying that he was through with aviation and that he was going away for a rest. The representatives of the Hendee Manufacturing Company, who had installed their Indian rotary motor in Ovington's plane, were very much disappointed at Ovington's failure to start. It is understood that Sopwith and Grahame-White have now undertaken to try out the Hendee power plant.

Shortly before noon Andre Houpert, the Moisant instructor, flew over from Mineola. In the afternoon William B. Cline made three circuits of the field in Dr. Northwood's headless near-Farman biplane. While he was in the air he narrowly escaped a head-on collision with Welsh, who was flying the wrong way round. Both Page and Webster took up passengers during the afternoon. Sopwith made one trip in his Burgess-Wright with Ovington as passenger. Early in the evening Welsh was out giving lessons to two pupils.

Thursday, October 12, being Columbus Day, and a public holiday, nearly 1,000 persons visited the field during the day. Page and Webster were out in the morning and Welsh and Cline in the afternoon. Webster went up with several rollers on one of his chains broken, with the result that the chain jumped and he dropped 50 feet, badly smashing the plane, but escaping himself with a severe shaking.

The weather conditions were ideal on Friday, October 13. There was hardly a breath of air stirring all day. The most active aviator was Dyott, who during the afternoon took up at least a dozen passengers in his Deperdussin. Fred Schneider made several good flights in his biplane and Cline remained up in his headless machine for over half an hour. Cline is a self-taught aviator and has made very rapid progress during the last week. His flight on Friday was a very creditable one. Cline was a victim of the carelessness in the management of the field. When he came down he ran into a three-by-four post that was sticking a couple of feet out of the ground on the spot where the aerial postoffice tent was erected during the recent meet. In colliding with this obstruction, Cline broke one of the supports running up from the skids to the lower wing.

BONNEY STARTS IN 48 FEET

Tulsa, Okla., October 19.—Leonard W. Bonney made an unofficial record for quick starting here today, when he arose from the ground in a distance of 48 feet. He made the quick lift in the teeth of an estimated 50-mile wind, and the distance was measured by a group of newspaper men and soldiers who were on the field. On his first flight he attained 4500 feet altitude. Bonney is now flying with the

Mercuria! Aeroplane and Entertainment Company, which is headed by William Gabriel, this being his first appearance under the new management. On Sunday after the plane had been set up here, a windstorm wrecked the tent and smashed the tail spar and five ribs in the upper plane, but Martin Smith, the company's mechanic, had it all ready for work Monday.

TICKELL TRAVELS CROSS-COUNTRY

Harrisburg, Pa., October 21.—The Interstate Aviation Company headed by M. B. Cumbler and employing Sam. A. Tickell as aviator, has made a very successful beginning with its exhibitions in this state. The plane used is C. F. Willard's "Banshee" which was made in the Glenn H. Curtiss shops and was successful in the hands of its former owner. On October 9, Tickell drove the machine over the Susquehanna river and landed on an island, completing a trip from Lancaster, Pa., to this place, a distance of 48 miles.

TICKELL IN THE ROBERTS-MOTORED BANSHEE

It was necessary to use 15 days, from September 27 to October 12, to complete the trip because one-day exhibitions were booked in every town along the route, and because of bad weather. Stops were made at Mount Joy, Florin, Bainbridge and Highspire. Throughout the week of October 8, the plane was idle in an open field near the last named town because of high wind, it being necessary to tie the biplane to a fence at one time to keep it from being blown clear off the ground. The Interstate company has engagements in Pennsylvania for the next week or so.

FLIES CROSS-COUNTRY IN NEW THOMAS

Bath, N. Y., October 20.—Walter E. Johnson made flights yesterday and today for the purpose of testing the new Thomas touring biplane, in which he plans to try for the American duration record. Today's flight was from here to Savona and return, was made in a rainstorm and a distance of 15 miles was covered. Yesterday he travelled over a total of 28 miles following a triangular course touching at Savona, Avoca and this place.

The biplane is equipped with a Kirkham six-cylinder motor and a Kirkham propeller and travels at a high speed as is shown by Johnson's time of 16½ minutes on the 15-mile flight and 32 minutes on yesterday's attempt. Johnson made his start yesterday at 8:17 and he reached Savona at 8:23. After a delay of three and one-half hours caused by motor trouble, he resumed his flight at 11:57, arriving at Avoca at 12:15, after which the return to Bath, a distance of eight miles, was covered in eight minutes.

ROBINSON STOPS AT ROCK ISLAND

Hugh A. Robinson left Minneapolis on the morning of October 17, at 9:12, flying from the surface of Lake Calhoun. At 9:51 he landed at Winona, Minn., 110 miles away, to replenish his gasoline supply and in traveling over the surface of the water at this place, struck a submerged dike, damaging his float. These dikes are placed along the Mississippi river by the government to turn the force of the current away from a bank where the river happens to be eating into the bank at too rapid a rate. They are designed to come just far enough above the surface of the water to show clearly, but during the present flood stage they are totally submerged.

Robinson's float began to leak badly and he was compelled to stay over night in Winona. On October 18 the weather was bad and he delayed another day in Winona, leaving there on Thursday, at 8:20 in the morning. He made the 28 miles to La Crosse, Wis., in 25 minutes and stopped there for a brief exhibition on the water. Making his departure at 9:53, he continued on down the river 63 miles to Prairie Du Chien. The distance was covered in 58 minutes, an unofficial speed of 65 miles per hour. The day was not over until he stopped at Dubuque, Ia., at 2:30 in the afternoon, with 58 miles more to his credit.

On the day following he flew from Dubuque at 10:30, to Belview, to Clinton, Ia., landing at the last named place at 11:50. In the afternoon he continued his flight to Rock Island, Ill., 99 miles from Dubuque, landing there at 3:57. The trip stopped at this town, Robinson wiring in to the St. Louis office of the Trans-Mississippi Flight Association, asking for a larger guarantee, claiming that certain sums guaranteed him along the route had not been forthcoming and that already he had lost \$5,000 through the refusal of certain towns along the route to pay the money promised him. He covered a distance of approximately 325 miles.

ARMY MEN OPEN ROCKINGHAM PARK

Salem, N. H., October 12.—Three army aviators, Capt. Paul W. Beck, Lieut. T. De Witt Milling and Lieut. H. H. Arnold, today celebrated the first public opening of the famous Rockingham park in five years by making exhibition flights before a crowd of 12,000 inside the gates and more than that number about the field.

The meeting was held under the auspices of the New England Aviation Co., which has recently secured control of the million-dollar park, and was the first of the activities planned by the corporation. Detachments of infantry and artillery from the Massachusetts militia aided in the day's events.

Lieuts. Milling and Arnold used a Burgess Model F biplane, while Capt. Beck used the Curtiss biplane in which he carried Postmaster-General Frank H. Hitchcock at the Nassau boulevard meet. Owing to the failure of his mechanicians to arrive, Capt. Beck was compelled to call local aid in the assembling of his biplane and was unable to make a flight until four o'clock. The exhibition flights were made in a puffy wind at times of 20 miles an hour, and Beck, returning after an 11-minute flight during which he discovered the soldiers in hiding in the neighboring woods, declared he had the toughest time of his flying experience.

Beck's presence of mind stood him in good stead when alighting on one of his flights. His momentum was so great that the biplane nearly struck a group of ladies, including Mrs. W. Starling Burgess. Springing from his seat as soon as the biplane struck the ground, Beck ran along with it, bearing his weight against it, stopping the machine within a few feet of the ladies.

The work of Lieuts. Milling and Arnold was of a high order, each performing fancy evolutions that brought thunders of applause from the assembled thousands. It was planned to have C. C. Bonnette, the parachute jumper and amateur aviator, make an ascension and triple parachute drop, but after the wind had blown over one of the supporting timbers, narrowly missing several of the volunteers around the gas-bag, Bonnette was advised not to attempt the flight owing to the wind.

FLIES WRIGHT HYDRO TWENTY-THREE MILES

Detroit, Mich., October 20.—Making one of the longest hydro-aeroplane flights on record with a passenger, Frank Coffyn flew over Lake Michigan yesterday for 23 miles with Russell A. Alger. The trip, which lasted for 26½ minutes ended at the Canadian club across the lake, where the two spent the night. At 8:20 this morning they returned in a wind that formed white caps on the lake, covering the distance in 22 minutes. While coming back they had the interesting experience of chasing ducks in the aeroplane, for the machine scared up quite a number.

On October 18, the Wright hydro, equipped with new aluminum floats, was out for a good day's work. In the morning Coffyn carried Fred Alger 16 miles across the lake to what is known as the Old Club. They returned after a half an hour, covering the distance in approximately 22 minutes. In the afternoon Coffyn made what is estimated to be the weight carrying record for a Model B Wright, flying with Russell and Fred Alger in the plane, a total weight, including himself, of 598¼ pounds. It is the first time three people have made a flight from the water.

It is planned to take a set of moving pictures of the new machine from the fast motor boat Gretchen II, which accompanies the craft on her trials. The pictures will be taken to help Coffyn in studying the action of the water on the floats and their action in relation to the planes. The films will also be interesting as the first taken of a water aeroplane.

On Monday, October 16, Coffyn made nine flights over the surface of the lake, carrying several passengers, among them Mrs. Russell A. Alger. She is probably the first woman passenger in this type of machine, and she enjoyed the trip so hugely and talked so well about it afterward that Coffyn was compelled to take four of her lady friends out before the afternoon was over. They were, Mrs. De Witt Loomis, Miss Anne Loomis, Mrs. F. A. Hinchman and Mrs. Maurice Williams. Coffyn said after the flights that the ability to fly over the water safely would undoubtedly go a long way to popularize the sport of flying. "It will interest a larger and a better class of men, too," he said.

WRIGHT GLIDER IS LIKE MODEL EX

Manatee, N. C., October 19.—The return of Orville Wright accompanied by his brother Lorin and Alec Ogilvie, who came from England for the purpose, has stirred a great amount of interest in the new series of experiments that they are conducting there.

Up to the present time their efforts have been confined to practice with a glider of the biplane type. On this the operator, instead of lying down as in the early Wright gliders, is seated as in the standard Wright machine with the regulation control levers in either hand.

On this glider there is no front elevator, the vertical and horizontal rudders both being located in the rear 12 feet back from the following edge of the main planes. The only change that it has been found necessary to make is the increase of the size of the vertical rudder. The original rudder was found insufficient to control the machine properly in the heavy winds that are necessary for the operation of the glider. The former rudder was replaced by an old rudder left from the early experiments. It is of the same size as the rudder now employed on the regular passenger-carrying Wright biplane.

The machine is practically the same as the Model EX Wright powered machine, except that the skids are shorter, to cut down wind resistance. The dimensions are the same, being 32 feet span and having a five-foot chord. The camber shows slightly less curvature than the motored machine to give it better gliding ability, the weight to be carried being much less than with the powered biplane. The amount of carrying surface is the same.

With this glider, starting from one of the 75-foot sand hills, Orville Wright twice exceeded the world's record for a glide by remaining in the air on both occasions for more than 1 minute 25 seconds. Ogilvie has also made some glides and, although he has had considerable practice gliding in England when teaching himself to fly a Wright, none of his glides have equalled those made by Orville Wright, either in length or duration.

EUGENE B. ELY KILLED

Eugene B. Ely one of the best known American exhibition fliers and the only man who has been able to alight on the deck of a moving battleship, was killed on October 19, while flying an exhibition at Macon, Ga. As far as can be learned, the flier had just made a long dip and was about to bring his machine back to a level when it failed to respond and continued on to the earth, striking with terrific force. Ely jumped just before it struck and was thrown against the ground to receive fatal injuries.

The fall took place at 3:30 o'clock, and Ely died just 11 minutes afterward. The flight on which he fell was his second of the day, and spectators say that he gave no sign of faltering or of losing control before the accident happened. The crowd was uncontrolled and fought about his machine for several minutes after the fall. During the struggle Ely's tie, cap and other articles of clothing disappeared. His wife was notified of his death by Mrs. C. F. Willard. It was the first time Mrs. Ely had missed being present at an exhibition by her husband.

Ely's body was taken to Davenport, Ia., and funeral services

EUGENE ELY

were held there October 22. It is a curious fact that the aviator's body arrived in Davenport on October 21, his birthday. Ely was 25 years old, having been born in 1886. Before entering aviation he was in the automobile business in various capacities, ranging from chauffeur to racing driver. His first flight was made on April 1, 1910, in a Curtiss biplane equipped with a Curtiss motor. He was the holder of pilot's certificate No. 17, which he received on August 20, 1910.

His principal achievements were sounded throughout the world at the time of their doing last January and February. He flew first from the deck of the cruiser Birmingham to the shore at Norfolk, N. C., and later at San Francisco, Cal., flew from the shore to the deck of the cruiser Pennsylvania and return. He also made a series of flights in connection with the army maneuvers at the San Francisco meet and won the appointment of general aide to the governor of California.

MOISANTS HEADED FOR MEXICO

New York, N. Y., October 23.—It has just been announced by the Moisant company that five of its aviators will fly at the aero meeting on the occasion of the inauguration of president Francisco I. Madero of Mexico, to be held during the next month at Mexico City. The contract which promises prizes aggregating \$100,000 in American gold was signed on Saturday in New York, with Senor Luis Vic Roumagnac conducting the relations between the Moisant company and the Mexican government. The prize money, it is said, will be paid, half by the Mexican Federal government and half by the leading merchants of Mexico City. It is understood that it will be open to all.

The flying at the capital of Mexico will continue a week, after which the five aviators, Miss Matilde Moisant, Miss Harriet Quimby, Andre Houpert, George M. Dyott and Capt. Donald Patrick, will visit several other Mexican cities. Guadalajara, where a total of \$25,000 has been posted, will be the first stop, after which the prospective route touches San Luis Potosi, Puebla, Hermosillo, Vera Cruz, Monterey and other cities. The fliers all use Moisant monoplanes.

The Mexican government, in addition to a 30-horsepower, has purchased five 50-horsepower Moisant monoplanes for its government school, which will open on November 7. The machines will be thoroughly tested by the Moisant fliers when they are in the city in order to show the value of the new military-type Moisant. It is planned to end the Mexican tour with a short series of exhibitions in Canal Zone.

RODGERS HAS COVERED 2299 MILES

Calbraith P. Rodgers is now far along on his flight across the continent. It is expected that the trip will be very nearly two-thirds completed by the time this issue goes to press, and even with the total of 2,299 miles on Monday, the flight is acknowledged by all enthusiasts to be the most wonderful achievement of its kind.

Since Rodgers has been in the south the weather has been more favorable and he has been able to make good progress. Delays have resulted, however, from his losing his way occasionally and from motor trouble. Following is a table of his time since arriving in Vinita last week. It should be noted here, that the table of last week was exactly one day late throughout the latter half, owing to typographical error. Friday, September 29, in last week's table should read "Repairs," and each day following should be read forward one day:

MONDAY, OCTOBER 16.

	Mileage for day.	For trip.
Left Vinita, Kans.....	7:41 a. m.	
Arrived Muskogee, Okla.....	9:14 a. m.	
Left Muskogee, Okla.....	11:14 a. m.	
Arrived McAlester, Okla.....	12:30 a. m.	125 1,830

TUESDAY, OCTOBER 17.

Left McAlester, Okla.....	7:30 a. m.	
Stops at Denison, Bonito and Gainesville.		
Arrived Fort Worth, Tex.....	4:16 p. m.	191 2,021
Followed wrong tracks and lost way.		

WEDNESDAY, OCTOBER 18.

Left Fort Worth, Tex.....	12:15 p. m.	
Arrived Dallas, Tex.....	12:45 p. m.	32 2,053

THURSDAY, OCTOBER 19.

Left Dallas, Tex.....	2:20 p. m.	
Arrived Waco, Tex.....	4:00 p. m.	136 2,189

FRIDAY, OCTOBER 20.

Left Waco, Tex.....	11:15 a. m.	
Gave exhibition at Granger.		
Arrived Austin.....	1:55 p. m.	110 2,299
Arose from Austin to continue trip at 4:00, but landed in nearby field.		

MOISANT SCHOOL GOING TO FLORIDA

New York, N. Y., October 23.—The management of the Hempstead Plains Aviation School here, is planning to close up its New York branch for the winter, on account of the cold and the high winds that usually prevail. A similar institution will be opened in Florida and probably another branch will be established in California. The last mentioned will be a permanent institution after its opening in December, while the Florida school will not open until January and will continue three months.

FLIES FROM NEW BEDFORD TO MIDDLEBORO

New Bedford, Mass., October 15.—Harry N. Atwood today flew from this city to Middleboro where he is to fly Wednesday, covering the 21 miles in 20 minutes, with Edwin C. Cotton of Lynn as passenger in his Burgess Model F biplane. He left Fort Rodman at 8:15 a. m., and alighted on Mills field, Middleboro, without incident, at 8:35.

Atwood narrowly escaped an accident while flying in a 30-mile wind here yesterday. He had gone aloft to distribute advertising cards for the local trade organization when one of the fliers blew into the intake of his motor, causing a stoppage of power. He had just completed a 300-foot volplane and was about to bring up horizontally when his power was cut off.

Leaping over automobiles and a stray cow, the aeroplane finally brought up against a stone wall, the only damage being a broken skid and smashed rudder supports. Atwood jumped from the machine just before it hit the wall and was uninjured. A crowd of nearly 25,000 people witnessed the accident.

TWO NEW BLERIOT MONOPLANES PRODUCED

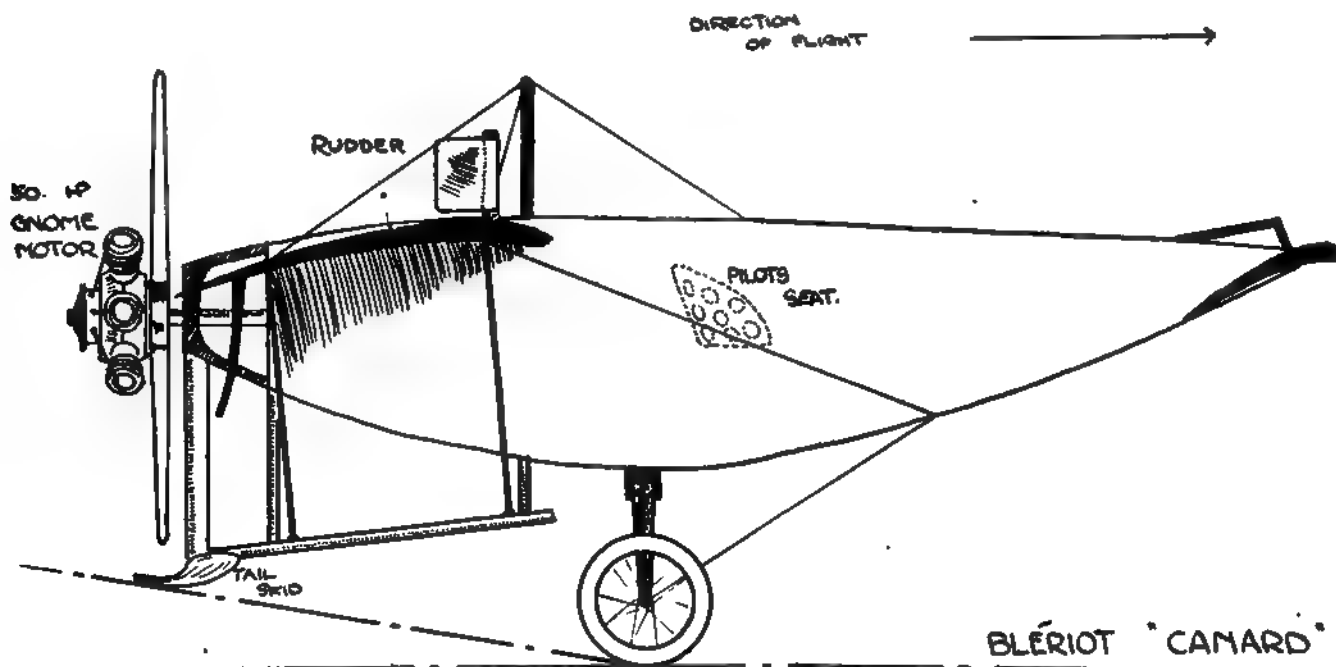
Amongst our designer-constructors, Bleriot certainly deserves pride of place for vigor and activity. During his holidays at his summer villa at Hardehot, near Boulogne, he has constructed and tested two new machines. One of these machines is a new racing monoplane of the No. XI type, while the other one is a tail-first machine. From the accompanying sketches can be seen how contrasted are the outlines of the two models, for whereas the latter is positively ugly, the former possesses a gracefulness of outline for which Bleriot is unexcelled. It is in the "Canard" that the most interest is centered, for it is in fact a resurrection of a model with which Bleriot achieved his first successes at Bagatelle, in the year 1907. In September of that year he succeeded in making a long hop of 450 feet, which earned for him a medal and a prize of \$50.

This new Canard bears a striking resemblance to his former machine, with the exception that it is fitted with a different type of landing chassis, and that the wings have no up-turned tips. The engine, a 50-horsepower Gnome motor, direct-coupled to a Chauviere propeller, is mounted at the rear end of the short, bulky fuselage. At the front of the body is the elevator, which under conditions of flight presents a

greater angle of incidence than the main planes, in order to endow the machine with longitudinal stability. The rudders which control the steering to right and to left, are very small, and are mounted vertically on the tips of the wings. In the matter of lateral balance, Bleriot has made use of allersons, which are operated by means of a tube passing through the wing. The landing chassis, reminiscent of Nieuport, is composed of two wheels attached to the fuselage by means of a curved laminated steel spring. It is an exceedingly simple arrangement, and possesses an undoubted advantage of presenting little head resistance. Accommodation is provided for the pilot considerably in advance of the wings.

The other machine which Bleriot has evolved during his vacation is, as is mentioned above, a monoplane of the racing type, and which under test with Alfred Leblanc at the lever, has attained a speed in excess of 81 miles per hour. The chief peculiarity about this machine is that the wings are flat on the under surface, and are possessed of a degree of suppleness which allows them within certain limits to adapt themselves to high speed by the automatic reduction of their angle of incidence. The fuselage, landing chassis, and horizontal

Continued on Page 86.



E. PERCY NOEL, Founder-Editor

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The Editor is pleased to consider MS and photographs for publication, but only material that is likely to prove of interest to the readers of AERO. The Editor cannot undertake to answer technical inquiries except in the columns of AERO.

TO MAKE THE AEROPLANE SAFE

While practically everyone concerned with aviation hopes for, if he does not believe in, a development of the basic aeroplane into something radically different and better, aviators know that even with the best machines used today there is a possibility of improvement so that they will become safer vehicles without any radical change.

Accidents, whether fatal or not, are frequently attributed to the aviator, and it is true that the personal equation is important; but the machines have not in three years of progress become as nearly perfect

mechanically and structurally as they might be for the greatest factor of safety.

In view of this it seems that the winter work for constructors, assisted by aviators of the greatest experience, or by aviators who choose to turn for a time to the improvement of the machines they drive, lies chiefly in refining the present aeroplane into a more trustworthy machine.

The aviator who has learned to fly well and has had sufficient experience to feel himself the master of his machine when the controls perform their various functions properly and when the apparatus remains intact, fears no accident from manipulation.

He does dread the possibility of "something breaking."

The aviator knows when he flies that if any one of a number of parts are broken, or if the longitudinal control becomes disordered that he will have a small chance to alight safely. He is forced to depend upon the manufacturer and to a certain extent the mechanicians, for his safety in the air.

The aeroplane engineer must now look with greater attention than ever to structural details. He must weigh the relative strength of one part to another, experiment and remodel until he has made an aeroplane that will not have one spot where the factor of safety in relation to every other part is not far greater than he imagines will ever be necessary.

If the man who contemplates the use of an aeroplane for pleasure knows by the record of a certain make of aeroplane in the air that it is structurally as strong, and reliable, comparatively speaking, as an automobile—without reference to the motive power—he will not hesitate long to buy and use it.

At present we are not as sure of the strength of the vital features of any aeroplane. It will require a year's record without an accident for any manufacturer to prove to many men who would use the aeroplane for pleasure that it is a safe vehicle.

Discussing freely the experiments which he and his brothers are conducting at Kill Devil Hills, N. C., Wilbur Wright, while passing through New York, said: "There is no secret about our new machine. It is simply a development of all that we have learned by study of flying and experience in flying. Anybody who has seen the buzzard fly knows that there is a method by which man may sustain himself in the air, once he gets there. What a bird can do a man can do, as 'Darius Green' said. Of that, there is not the slightest doubt. The only difficulty is that nature provided the bird with the means to stay in the air without exertion, while man has got to study it all out. We won't use a motor at the start. The problem is to find out whether, once in the air, we can stay there for an indefinite period."

Activity of Aviator and Builder

in a fall on October 14, and upon his release from the hospital today, he was urged by his relatives to give up his experiments.

A shoemaker of Brockton, Mass., Thomas Martin, has made several successful, though short flights, in a biplane built by himself during spare moments. The plane has a supporting surface of 264 square feet and is driven by a four-cylinder, 30 horsepower motor. Spruce has been used on the framework, while the skids are of white ash.

Daniel Mackney, an ordinary seaman attached to the naval training school at Newport, R. I., has already completed part of a hydroaeroplane with which he plans to experiment in the spring. He has had many conferences with Capt. Hugh L. Willoughby, and he declares that many of his ideas are different from those used in the accepted construction of a land, water and air flying machine. Mackney, who is the first enlisted man in the navy to conduct experiments, hopes to be transferred to the naval aviation school.

T. S. Leever, of Vallejo, Cal., is trying out a Curtiss type Biplane which he made himself. The machine is equipped with a Gray Eagle Motor.

The aviation exhibition scheduled for Sac City, Ia., October 12, was called off on account of rain.

William H. McKeen, of Denver, Colo., has patented a flying machine using the wing-flapping principle, which he claims will lift 20 tons and that it will settle as slowly as a parachute, should the engine stop.

Hugh Robinson is said to have started from Minneapolis, Minn., on Tuesday, October 17, in his plane number 13, with 13 members of the Thirteenth Minnesota regiment which participated in the capitulation of Manila on August 13, 13 years ago. It is also said that a black cat (fish) crossed directly in front of him as he started.

CONGRESSMAN RAINEY OF ILLINOIS CONGRATULATES N. J. NELSON, WHEN THE LATTER VISITS HIM AT HIS HOME

Horace F. Kearney is now flying in a Benoist plane equipped with a Hall-Scott motor. His bookings are all made through the Benoist Aircraft company. His flight of Sunday, October 8 at the Fairgrounds park, St. Louis, was made with the above equipment, instead of another make of engine mentioned in the story of that exhibition in a recent issue.

B. N. Elek is now at Kinloch park at work upon a monoplane. He has taken the frame of the old Prouse monoplane, which was manufactured last spring in the Benoist shops, and he is adding standard wings to it. Judge H. Prouse, who designed the machine used an original type of wing which did not prove successful. Elek has installed an Indian seven-cylinder rotary motor in the plane and he expects to be doing field work within two weeks.

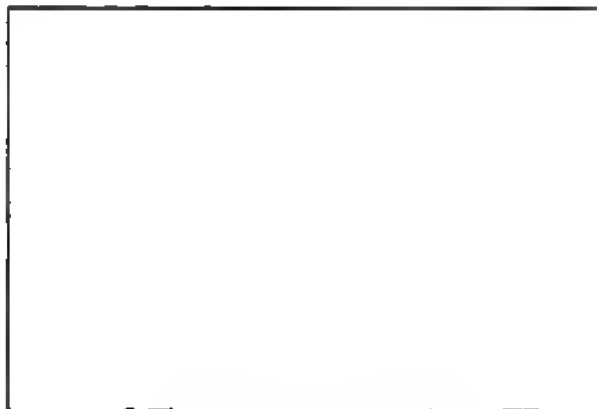
Charles F. Walsh, who is now flying with the Curtiss aviators, made a hit in his appearance at Albuquerque, N. M., on October 14. It is said to have been the first time anyone had ever flown in Albuquerque, because of the rare atmosphere at its altitude of 6,000 feet above sea level. On one flight he carried a passenger for three miles over a circular course. The secretary of New Mexico State Fair, under whose management Walsh flew, said that his exhibition increased the attendance at the fair more than 50 per cent over former years.

The Bleriot monoplane ordered by E. J. Marley, of Sumner, Miss., for A. C. Menges, of Memphis, Tenn., to fly was sent out last week after being tested by Andre Houpert of the Moisant school. It is said to be the first monoplane to be shipped to the south.

W. E. Howe and P. Le Roy, of Hartford, Conn., are the builders of an original monoplane. The machine, although following the Bleriot in general appearance, has new ideas in construction used in it, notable among them being a cork trussed rib. It has a spread of 32 feet, is 24 feet 10 inches in length and weighs 450 pounds with its 30 horsepower Gray Eagle motor installed. The makers are practicing now.

H. Helm Clayton, of Canton, Mass., president of the Aero Club of New England, together with Jay B. Benton, of Winchester, and Frank C. Bowler, of Boston, made a 60-mile balloon trip from Pittsfield in the balloon Boston. The landing was made at East Hartford, Conn. The greatest altitude recorded was 8,000 feet.

Alfred Barnett, an amateur aviator who has been practicing in Providence, R. I., for some time, has promised his family to give up aviation for a while. He was badly shaken up



B. O. HADLEY FLYING THE SEYMOUR CURTISS WITH
ROBERTS MOTOR AT MINEOLA

Harry Sommer, of Kent, Wash., has a Bleriot-type plane which V. C. Babcock has been flying successfully.

According to report, 50 motors have been sent out by the Roberts Motor Company since March 1, and none has failed to fly.

The Romano-plane, which was built in Seattle, Wash., is now awaiting the arrival of a Gnome motor. The Stafford monoplane of the same town is also idle while the owners are searching for more capital to make necessary repairs.

Didier Masson is making flights in Canada with D. P. Dorgan, Hubert Latham's old manager, in charge of the business arrangements. Masson flies a Gage special equipped with a 50-horsepower Gnome engine.

Aero Club of Saint Louis

Temporary Office: 19 South Broadway, St. Louis.

E. Percy Noel, Secretary.

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BENOIST UNDISMAYED BY \$20,000 FIRE

St. Louis, Mo., October 20.—The Benoist Aircraft company's plant at 6664 Delmar avenue was destroyed by fire this evening shortly after seven o'clock. The cause of the blaze is unknown, but it is said that the fire started very suddenly as though from an explosion or from spontaneous combustion. Tom Benoist, the proprietor, says that he does not know just how much valuable material was lost in the fire, but estimates the loss at \$20,000. The building and stock was insured only for a small amount.

A station of the fire department is located less than a quarter of a block away, but the rush of the flames was so rapid that the firemen could do little more than keep the fire from spreading to adjoining property. Benoist thinks the fire started from spontaneous combustion of a certain compound of linseed and alcohol used to waterproof plane fabric. There were several complete and partly complete planes in the shop at the time and there was a large amount of raw and finished material, just how much will never be known, for an inventory had not been taken for some months. There were three new Roberts engines in the front part of the shop which were lost.

Benoist's is probably the oldest aeronautic supply business in the country. It was established, here, more than two years ago. It grew rapidly and new quarters were necessary early last spring and the company was moved to the location at 6664 Delmar avenue. The factory turned out 28 successful machines during the summer, all of which are now in the hands of fliers about the country. In connection with this business Benoist established a training school at Kinloch park, and here he trained W. H. Bleakley, G. A. Holmes, W. F. Adams, H. F. Kearney, Thomas McGoeys and Herman and Henry Wetzig, all of whom are now flying exhibition under the Benoist management.

During the spring Benoist was practically the only man to promote a semblance of activity at Kinloch field and he is said to be responsible for the rapid growth of interest early this summer in that flying ground as a training field for amateurs. Benoist was the first St. Louisian to take up flying and his flights at Kinloch field last February were probably the first made in this city by a St. Louis man in a St. Louis-made machine.

While the fire will compel a change in his plans for the winter, Benoist says he does not intend to let it stop the rapid progress his factory has been making this year.

"I have already rented a new building," he says, "and given orders for desks and the necessary office equipment. Within a week I will be ready to do business."

M. G. Adams, who recently tried out his monoplane at Villa Grove, Ill., has decided to remove to Parsons, Kans., before going on with his practice. The monoplane was wrecked on its first trial, when it broke away from the men who were holding it while Adams was trying the motor. Adams was hurt, but not badly.

THE DIARY OF FLIGHT

THURSDAY, OCTOBER 12.

Jerseyville, Ill.—W. H. Bleakley flew. In landing broke top wire on aileron control and smashed one wing.

Oakland, Cal.—Weldon B. Cook flew from Alameda to Adam's Point, a distance of four miles; on attempting to return he made a miscalculation and fell into the lake at Adam's Point. He was uninjured.

Watsonville, Cal.—Frank Bryant gave two exhibition flights in an Elbridge-Motored Curtiss Type.

Salem, N. H.—Capt. Paul W. Beck, Lieut. T. De Witt M'ling and Lieut. F. H. Arnold flew at Rockingham Park.

FRIDAY, OCTOBER 13.

Watsonville, Cal.—Frank Bryant flew at the Apple Annual.

SATURDAY, OCTOBER 14.

Greensboro, N. C.—Thornwell Andrews made a spectacular flight over the business and residence section of the city. He won \$1,500 cash prize offered by *Greensboro News*.

Santa Ana, Cal.—De Kor flew, winning his pilot's license.

Albuquerque, N. M.—C. F. Walsh flew four times. On his third flight he carried a passenger.

SUNDAY, OCTOBER 15.

Wausau, Wis.—John Schwister made a flight of 32 miles in his biplane, from his hangar, seven miles south of this place and to Mosinee, Wis., about 14 miles south of here and return. On the return flight he came to Wausau and circled the city. He was in the air a little less than an hour.

Duluth, Minn.—Thomas McGoeys flew, arising from a small baseball park, running great risk of smashing his plane against the fences. There were nearly 15,000 people present.

MONDAY, OCTOBER 16.

Los Angeles, Cal.—De Kor arrived here today after flying cross-country from Santa Ana.

Nassau Blvd., N. Y.—Dyott, Page, Webster, Welsh, Shneider, Cline and James V. Martin flew.

TUESDAY, OCTOBER 17.

Los Angeles, Cal.—E. R. Fowler flew for 30 minutes.

WEDNESDAY, OCTOBER 18.

Manateo, N. C.—Orville Wright, using the new Wright Glider in a wind of 35 miles per hour, made a flight lasting one min. 15 sec.

Los Angeles, Cal.—E. R. Fowler wrecked his machine in a practice flight before starting on the across-America race.

Middleboro, Mass.—Harry N. Atwood made three flights in a pouring rain. Each lasted from 10 to 12 minutes. They were a part of the celebration of "Atwood Day" in this town, for it was in this vicinity that the Aviator's parents and grand parents formerly lived. There were 3,000 people present in spite of the need of umbrellas and raincoats.

Belvidere, Ill.—Lincoln Beachey flew.

THURSDAY, OCTOBER 19.

Macon, Ga.—Eugene B. Ely flew. He lost control of his machine while making a dive at full force, receiving fatal injuries.

Nassau Blvd., N. Y.—Claude Grahame-White flew for half an hour in his Baby Biplane equipped with the new Indian Rotary Motor.

Savona, N. Y.—Walter Johnson flew. Using the Thomas Headless Biplane, he covered a distance of 28 miles over a triangular course in an actual flying time of 32 minutes. The course touched at Bath, Savona and Avoca.

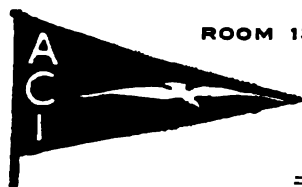
Natchez, Miss.—J. A. D. McCurdy flew.

FRIDAY, OCTOBER 20.

Bath, N. Y.—Walter Johnson made a flight to Savona and return in a rain storm. He covered a total of 15 miles in 16½ min.

Natchez, Miss.—McCurdy and Godett flew. Godett damaged his plane in a collision with the fence.

THE AERO CLUB OF ILLINOIS



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FLYING FIELD
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COLLIER NOMINATED FOR PRESIDENT

New York, October 21.—At the last meeting of the executive committee of the Aero Club of America nominations were made for the club's annual election to be held November 13. Robert J. Collier, it was learned, had consented to become a candidate for the office of president of the club. Collier has been very active in aviation affairs recently, maintaining two biplanes at his country place at Wickatunk, N. J., where his recent entertainments have included aero flights for those of his guests who showed a liking for them. He is a member of the club's committee on aviation. The term of Allan A. Ryan as president expires within a few weeks. Ryan for several months has been unable to give his attention to the club's affairs owing to absence from the city in Europe during a large part of the aviation season. On his return in September he went to Colorado Springs, where he was reported as having purchased a house and being in poor health.

For first vice-president there was nominated James A. Blair, Jr., the present third vice-president; for second vice-president, Major Samuel Reber, U. S. A., now chairman of the Contest Committee; for third vice-president, Charles McCormick, and for fourth vice-president Henry A. Wise Wood. Cortlandt F. Bishop, president of the Federation Aeronautique Internationale, is expected to retire as the first vice-president and Dave H. Morris as second vice-president. Owing to the rapid growth of the club it was decided to expand the membership list from 500 to 750 and to increase the number of governors by four, making 24 in all.

For additional governors there were named: G. F. Campbell Wood, Henry A. Wise Wood, Charles E. Knoblauch and W. Redmond Cross. There were also nominated for places of governors whose terms soon expire: Russell A. Alger, of Detroit; Jerome H. Joyce, of Baltimore; Albert B. Lambert, St. Louis; George M. Meyers, Kansas City; Harold F. McCormick, Chicago; A. Lawrence Rotch, Boston.

A. C. A. OPPOSES F. A. I. AMENDMENT

New York, October 23.—The Aero Club of America is opposed to an amendment to the conditions of the race for the Coupe Internationale des Aeronauts, proposed by the German delegates to the coming statutory conference of the Federation Aeronautique Internationale. The proposed amendment as understood by the officials of the club, would abolish the largest of the four classes of balloons admitted to the competition. The American delegates will also oppose a proposal to eliminate from the test for balloon pilot's license the final requirement that the applicant must make an ascension entirely alone lasting an hour or more.

It is reported that the United States government may establish a winter aviation school at Waycross, Ga. The fields near this town are said to conform to the specifications made by the government of "somewhere in the south not too near the coast, and not among hills."

AERONAUTIC MAPS PRODUCED

Now that cross-country flying has begun in earnest in this country, the need of accurate aeronautical maps has been emphasized. The recent troubles of several of the aviators trying for the Pacific coast prize in losing their way has accentuated this demand.

During the past week there has been exhibited in the club rooms of the Aero Club of America in New York a new map designed especially to meet the requirements of aviators. The map shown represents the western half of Long Island, and is in the form of a model showing the actual bird's-eye view of the earth's surface in miniature. All the grades, hills and rivers are shown, together with the favorable landing places, aerodromes, railroads, roads, high-tension wire lines, and other features which are of value to the man in the air.

The map has been made exactly to scale, and is so accurate that if pierced by a pin at any point the elevation would be found exactly to scale. Those who have actually flown are very enthusiastic over the model, and by special request of ex-Lieutenant Governor Woodruff, president of the Aero Club of New York, the model will be shown at the Nassau Boulevard Meet. The map has been made under the auspices of the Aero Club of America by the aeronautical department of the *Automobile Blue Book*, and is produced by a new process which has been under development for several years, and which permits of the rapid reproduction of any section of country in exact miniature, either in plaster or by photograph. The aviator of the future will with the aid of a photograph of one of these maps be enabled to find his way in any part of the country in which he desires to fly without the slightest trouble, being able to know at every moment just where he is and where the nearest favorable landing place is located.

The International Aeronautic Federation, at the convention next month in Rome, will have on exhibition representative aero maps of all the countries, and it has been decided to send one of these maps as America's best production.

DeKOR QUALIFIES FOR LICENSE

Los Angeles, Cal., October 18.—E. R. Fowler has been in this city for several days making preparations for another start in the transcontinental race. He succeeded in getting his machine ready for a trial yesterday and early in the day made a test flight lasting 30 minutes. He was scheduled to start his flight this morning at about 10:30, but he wrecked his machine while making a practice flight. He had been in the air about five minutes when he made a right turn near the earth and came down on one wing, wrecking it along with the skid on the same side. He will try again in the near future.

One of the most important events of the week in this section was the flying of Charles De Kor at Santa Ana on October 14, when he qualified for his pilot's license. The flights were made in a Curtiss-type machine equipped with a Hall-Scott 60-horsepower motor and a Schoglund propeller. On October 16, he flew across country from Santa Ana to Dominguez field, where he will probably stay for some time, making it his headquarters for the winter.

OAKLAND BOYS HAVE MODEL MEET

San Francisco, October 12.—A power and gliding contest was held by the members of the Oakland Amateur Aero Club at the Oakland Y. M. C. A. on Saturday evening, October 7, in which 13 members participated.

The rules covering the contest were as follows: Weight of gliders, six ounces; power machines must be within 20 inches over all length or breadth, and could not weigh more than two ounces complete. Three trials were given to each contestant, the flight being measured in a straight line from the start to finish.

Vaughn Miller received the first prize of a silver medal for a glider flight, William Davis took first prize in the power contest. Carl Caldwell exhibited a perfect model of a standard Bleriot machine.

AERO MART

These Notices Bring Results

ALL WANTS 1c. A WORD FOR SALE and FINANCIAL, ETC. 2c. A WORD

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BOX NUMBERS

If desired, replies may be received at the offices of the Aero Publication Company. Advertisers wishing to take advantage of this convenience will pay 10 cents extra for registration, to cover the cost of forwarding replies.

SITUATION VACANT.

AVIATOR—Wanted, an experienced aviator for exhibition and cross-country flights, Curtiss biplane. Address Box 151, care Aero.

SITUATIONS WANTED.

ASSISTANT—Young man, 22, wishes position with manufacturer or club to work and pay small amount, in exchange for experience which will enable him to become an aviator. References exchanged. Address Frank Turner, 1145 Bushwick Ave., Brooklyn, N. Y.

AVIATOR-PILOT—Experienced aviator, licensed by the Aero Club of France and of the Bleriot School of Aviation; experienced mechanic, seeks engagements for meets, exhibitions, across-country flights, or as pilot with a school and aeroplane factory; can handle Farman and Curtiss biplanes, also. Many flights in America. Best references. I. Semeniouk, 120 W. Ninety-eighth St., New York, N. Y.

AVIATOR—I desire position with party owning biplane. Have taken lessons in flying, so can guarantee my ability to fly. Present address, Chicago. Box 158, St. Louis.

ENGINEER—Graduate technical engineer with several years' experience in experimental engineering, desires technical or commercial position with manufacturer or dealer in aeronautical apparatus, involving either development work on apparatus, or the commercial handling of supplies and products. Willing to qualify as aviator. Location immaterial; south or west preferred. E. S. Burnett, Sibley Mechanical Laboratory, Ithaca, N. Y.

MISCELLANEOUS WANTS.

ENGINEER—Would like to install a 60-horsepower Elbridge engine with a complete power plant in a standard flying machine. Write for particulars. Carl Chapman, 421 Oak St., Kalamazoo, Mich.

MOEDEBECK HANDBOOK—Wanted a copy of Moedebeck's Handbook. Will pay \$2 for second-hand copy in good condition. Box 200, care Aero, St. Louis.

MOTOR—Wanted a good 50-60-horsepower motor of standard design. State lowest price and condition. Weeks, 2917 Evanston Ave., Chicago.

RUNNING GEAR—Wanted to purchase a second-hand Bleriot-type running gear complete. Webb & Coddington, Charlotte, N. C.

FOR SALE.

AEROPLANE—Curtiss-type. What am I offered in cash or exchange? Warren J. Bauman, Lock Haven, Pa.

AEROPLANE—Beautiful new fan-tail double control Curtiss-type aeroplane equipped with standard 50-horsepower motor. Has flown; special price for immediate acceptance, Box 155, care Aero, St. Louis.

AIRCRAFT SUPPLIES—Aeroplanes for sale and built to order. Submit your designs and get our prices before going further. Propellers, wheels and fittings made to order. The Eaton Brothers Factory, 1708 Echo Park Ave., Los Angeles, Cal.

AIRCRAFT SUPPLIES—Aeroplanes for sale and built to order; propellers, models and model stock; Chicago engines; flying models. Chicago Aero Works, H. S. Renton, Prop. 164 N. Wabash Ave., Chicago, Ill.

B. & W. MONOPLANE 26 by 26 feet, 25 horsepower, complete \$850.00. B. & W. turnbuckles spoke or Bleriot type \$.12 each, \$11.00 per 100, tested for 1200 pounds. We have one used monoplane at \$450.00. Particulars and photos on request. Burgess-Wiseman Mfg. Co., 1383 E. Ninety-second St., Cleveland, Ohio.

BAMBOO—Special grades for aeronautic work. Skids, flexible, fibre, strong as steel and lighter than wood. Reed, rattan, split bamboo for models. Deltour, 49 Sixth Ave., New York City.

CARBURETER—For sale, one Schebler 1¼-inch aluminum carbureter; complete and ready for attachment to aviation engine. Very slightly used. A. V. Reyburn, Jr., 5305 Delmar Boul., St. Louis, Mo.

CURTISS-TYPE biplane. Have made flights 1000 feet high and 40 miles cross-country in this plane. Just as good as new. Will sell for \$500. Address Sam'l Barton, 238 Dumont Ave., Brooklyn, N. Y.

ELBRIDGE Aero special, 40-60-horsepower, Bosch magneto. El Arco radiator, and Requa-Gibson propeller. Almost new; \$650, cost \$1200. Write and let me tell you about it. E. O. Gunther, Nixon Theatre Building, Pittsburgh, Pa.

ELBRIDGE engine, 30-40-horsepower, El Arco radiators and propeller; good as new, \$500. Box 153, care Aero, St. Louis, Mo.

GLIDER—20 feet biplane, \$12.50. John Frier, 5833 Julian Ave., St. Louis.

HARRIMAN—30-40-horsepower water-cooled aeroplane motor, 1911 type, with magneto and propeller. Price, \$300. Address, Motor, care Aero, New York.

MAKE an aeroplane from your bicycle for \$600. Send 50 cents for blue prints with instructions. Address Hull Monoplane Co., Marshalltown, Iowa.

MONOPLANE PARTS—Parts for every successful type of monoplane, material and workmanship guaranteed, metal fittings a specialty. Tell us your wants; low prices. Quick deliveries. The Western Aeroplane Supply House, Sedalia, Mo.

MOTOR for sale, 25-30-horsepower Cameron engine; in excellent condition. Complete with magneto, carbureter and propeller. Price, \$300. G. F. Hess, Corvallis, Ore.

MOTOR—For sale, one four-cylinder Kirkham motor, 200 pounds thrust; A1 condition; two propellers. Reason for selling, plane broken making flight. Open for offers. Box 152, care Aero, St. Louis.

MOTOR, eight-cylinder 45-horsepower motor; A1 condition. Must be sacrificed on account of aviator's death. No reasonable offer refused. Also propeller can be seen. Ed. Lowy, 593 E. One Hundred and Thirty-sixth St., New York, N. Y.

FOR SALE—Continued.

MOTOR—Two-cylinder 10-12-horsepower, air-cooled aeroplane engine. Price \$125, complete with coil, carbureter, spark plugs; weight, 80 pounds. Hal C. Moudy, Tremont Hotel, Danville, Ill.

PROPELLERS—Laminated. Built to 8 feet 6 inches; any reasonable pitch. Price \$20. John Frier, 5833 Julian, St. Louis, Mo.

PROPELLER—Best grade walnut propeller built by Chelsea Aero Co. 8 feet 6 inches diameter, 6 feet 6 inches pitch. In excellent condition. Used only for six hours testing engine thrust. Will accept any reasonable offer. For particulars A. V. Reyburn, Jr., 5305 Delmar Blvd., St. Louis, Mo.

RADIATORS—Two 30-horsepower El Arco radiators; perfect condition. Cheap. One 7x4 Requa-Gibson tractor propeller. Address Chas. Prowse, Ferguson, Mo.

TRIPLANE for sale, \$200, 32 feet by 25 feet. Headless. John Frier, 5833 Julian Ave., St. Louis, Mo.

VALUABLE to you. Genuine actual size blue print drawing of rib of the Wright Brothers 1911-flyer on receipt of \$2.50. Krause Aviation Co., 1030½ Georgia St., Los Angeles, Cal.

FINANCIAL.

PARTNER—Half-interest in successful exhibition company and aviation school. Partner must have at least \$10,000 and become actively identified with concern. Box 149, care Aero, St. Louis.

PARTNER wanted to take interest in established aeroplane parts manufacturing business. Concern now on a paying basis. Box 150, care Aero, St. Louis.

PARTNER—Wanted party to advance money to get started filling contracts, have 50-horsepower Curtiss-type biplane, tent hangar, shipping boxes, extra parts and everything needed for exhibition tours. Will need from \$200 to \$500 to get started; many contracts in view. Can use party on road if they desire. Proposition must be taken at once. Further particulars address Box 156, care Aero, St. Louis.

PARTNER—Half-interest in a very successful aeroplane manufacturing and exhibition company, having well established factory and offices and flying grounds for their aviation school. Must have at least \$5,000 to \$10,000, and become actively identified with concern. Box 154, Aero, St. Louis.

CAPITAL—Young man requires financial assistance to build biplane. Have had course of lessons in assembling, also in straightaway flights. I will build machine and fly same. Located in Chicago, Box 157, Aero, St. Louis.

MODELS AND MODEL SUPPLIES.

COMPLETE PLAN drawn to scale with full instructions for building the only Wright three-foot biplane model that positively flies; 25 cents post paid. Drawing and directions for three-foot model Bleriot monoplane, 15 cents. Stamp brings most complete, interesting and instructive catalogue published. Ideal Aeroplane and Supply Company, 84½ West Broadway, New York, N. Y.

MOTOR—Our new all-aluminum, cellulose turbine, is ready for your model. This motor will deliver ⅓-horsepower for three minutes. Complete motor ½ pound. Watch it take prizes, but be sure that it is on your model. \$2.00 postpaid. The Co-operative Aero Association, Muncie, Indiana.

MODEL PROPELLERS—6-inch 30 cents, 10 cents each additional inch; ball-bearing shafts 30 cents, reed and rubber 1 cent per foot. Catalogue for stamp. Short-Canniff Co., Marlboro, N. Y.

INSTRUCTION.

DYKE'S GASOLINE ENGINE INSTRUCTION—Tells you all about engines, ignition, magnetos, every aviator ought to know. We also have working models of engines; learn to set valves, time ignition, etc. Write today for catalogue. It's interesting in itself. Absolutely free. A. L. Dyke, Publisher, Box 20, Roe Bldg., St. Louis, Mo.

LEARN to fly in two weeks. Students operating biplanes alone the first day; flying daily, weather permitting. Competent instructors in attendance. Aeroplane construction; also care and motor knowledge free. No bond required for breakage, terms very reasonable; write for terms. Aviators and aeroplanes supplied for exhibitions. Francaise Americaine Co., Mineola, L. I., N. Y.



1,005,810, October 17, 1911.—Silas J. Conyne, Chicago, Ill. A kite comprising an aeroplane and a keel extending longitudinally thereof, the keel increasing gradually in height and in width from the upper end of the aeroplane to the lower end thereof, and a bridle connected to the keel along the center line thereof.

1,005,812, October 17, 1911.—David Crockett, Birmingham, Ala. A propeller comprising a frame, a normally stationary axle, a sleeve rotatably mounted in the frame and surrounding the axle, blades carried by the sleeve at right angles thereto and rotatable on their longitudinal axes, a bevel gear carried by each blade, a bevel gear on the shaft meshing therewith, a bracket on the frame comprising a curved rack concentric with the axle, a lever secured to the axle, and a latch on the lever engaging the teeth of the rack.

1,005,871, October 17, 1911.—Walter I. Pennock Philadelphia, Pa. A captive balloon comprising an elongated longitudinally rigid balloon, a stationary rudder secured to the rear end thereof, an anchor line secured to said balloon wholly to the rear of the center of buoyancy thereof, laterally projecting rearwardly positioned and angularly elevated planes secured to said balloon, and a pair of slack auxiliary lines secured to said anchor line and to said balloon on opposite sides of said anchor line, the whole co-operating to increase the vertical stability of the balloon.

1,005,908, October 17, 1911.—Charles Michael Wanzer, Urbana, Ohio. A flying machine embodying a body frame having a double keel, the sections of said keel being set at an angle each to the other, the forward section being substantially parallel with the top of said frame and the rearward section being inclined from the end of the first said section to the level of the top of said frame to permit the downward swing of the rear of said frame preliminary to flight; a plurality of jack legs pivotally connected to said frame at near the top thereof, said legs being of sufficient length to lift the said frame off the ground when said legs are vertically disposed; and a prime mover carried in said frame for rotating the said legs on their pivots to move the free ends of said legs rearwardly past the center of gravity of the machine.

1,005,941, October 17, 1911.—Edgar John Crawford, Seattle, Wash. A flying machine including a gas bag, a frame therefor, a parachute above said gas bag and normally in close contact therewith, a series of springs carried by said frame, housings therefor, said springs being connected at one end to said parachute and being normally compressed within said casings, and means carried upon said frame for releasing said springs and thereby projecting said parachute away from said gas bag.

1,005,988, October 17, 1911.—Joseph G. Maris, Columbus, Ohio. An airship comprising upper and lower planes, gas receptacles between said planes and in open communication, propelling devices, a platform formed with side pockets and rotary elevating fans in said pockets, and a central rotary elevating fan with an open bottom inclosure.

NOTICE

Owing to the fire, which completely destroyed our factory and store the evening of October 20th at 6664 Delmar Boulevard, St. Louis, Mo., all correspondence files and records were lost.

We would ask that our customers who had orders on file with us to write us fully, giving all data regarding their order. Friends who have written us for our new catalogs describing either the Benoist School of Aviation or the Benoist Biplane, if they will write us at once, will receive our new catalog at an early date.

BENOIST AIRCRAFT COMPANY

(Successor to Aeronautic Supply Co.)

6628 Delmar Boulevard, ST. LOUIS, MO.

Tom W. Benoist, Manager

Patented March 14, 1911; July 25, 1911; October 17, 1911; Others Pending.

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We furnish propellers for all standard machines, but if your requirements are special we can make up quickly whatever you require, and guarantee the results.

Write for printed form on which to describe your machine, and ask us anything you want to know about propellers.

American Propeller Company
WASHINGTON, D. C.

TWO NEW BLERIOT MONOPLANES

(Continued from page 79)

rudder, remind one strongly of his later passenger-carrying model. At the forward end of the body which tapers towards the front, to reduce head resistance, is mounted the power plant, a 50-horsepower Gnome engine and "Normale" propeller.

Bleriot has at last departed from his usual practice of mounting the engine with bearings both in front and behind, as the motor of this new machine is entirely supported by pressed steel bearers inside the fuselage. The tail is fan-shaped, and is formed by the splaying out of the rear end of the body. A semi-elliptical flap is hinged to this rear edge, and performs the function of an elevating plane.

The dimensions of the Bleriot Canard are: Overall length,

HOW FAMOUS AVIATORS SAFEGUARD THEIR MACHINES

If a tire tears loose when the aeroplane lands it means a possible wreck, serious injury to the machine and endangers the aviator.

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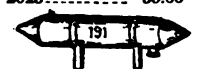
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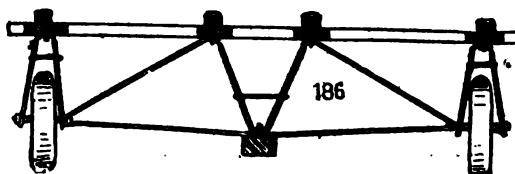
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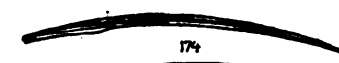
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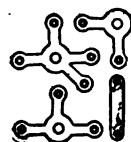
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No. 5



November 4,
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Edited by E. PERCY NOEL

WRIGHT GLIDER HOVERS FOR FIVE MINUTES

Manateo, S. C., October 27.—The past few days have brought to light wonderful progress in the glider experiments being conducted by the Wright brothers from Kill Devil hill, near here. On Tuesday, October 24, the most remarkable results were achieved, Orville Wright succeeding in keeping the glider aloft for nearly 10 minutes in the face of a 50-mile wind and during this experiment frequently made the machine climb against the wind. On another flight the same day he kept the machine poised in the air, without any forward motion, for a period of nearly five minutes.

Throughout the rest of the week the winds have been light and only short glides have been carried out. A new stability device has arrived from Dayton, but before testing it the brothers are returning to the Ohio shops and the experimenting will be abandoned for a time, the camp here being left in charge of Adam Etheridge, a farmer. Alec Ogilvie, who has been assisting the Wrights in their work, plans to leave

Manateo tonight and go direct to New York, to take a steamer for England. The brothers have come to the conclusion that a 25-mile wind is needed for their experiments and it is reported that their return to Dayton is to work out some new principle to reduce this.

On Tuesday, when the best flights of the week were made, the wind gauge, situated on a 12-foot pole, read 50 miles per hour and this was the highest wind the inventors have had to date. Orville Wright made 19 glides, the last being the record-breaker, which lasted nine minutes 45 seconds and covered a distance of nearly one quarter of a mile. During this flight the machine descended the slope of Kill Devil hill and then started climbing toward the brow of the hill opposite. Wright did not wish the machine to go above the crest of the hill for fear of meeting a down trend in the air, so he held it below the hilltop by a system of dives and slow ascents. In thus maneuvering the machine it is said that he found it necessary

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The Editor is pleased to consider MS and photographs for publication, but only material that is likely to prove of interest to the readers of Aero. The Editor cannot undertake to answer technical inquiries except in the columns of Aero.

THE SIGNIFICANCE OF THE PASSENGER

The most encouraging sign of progress in aviation recently is the fact which becomes more apparent each week that as a pleasure vehicle, the element of danger being eliminated, the aeroplane has no equal.

That even with its present weaknesses, the aeroplane has proved a very safe vehicle for passenger carrying. In the whole history of aviation there have been few fatal accidents to passengers, or to aviators carrying passengers.

Although no actual figures are available from which

to compile statistics, it is probable that the percentage of passengers killed in aeroplanes is not as great as the percentage of deaths to people riding in automobiles during the past six months, proportionately to the number of automobiles and aeroplanes used during that period. There have probably been a greater proportion of people injured by the latter vehicle than passengers by the aeroplane.

Whether or not many people are realizing that modern civilization entails dangers and so appreciate the hazard of riding swiftly in an automobile as scarcely less than riding in aeroplane with a capable pilot, at a good flying field, or over country where landings can be made, while the atmosphere is suitable, there are every day scores of people showing enough confidence in aviators and aeroplanes to use them.

When men ride in aeroplanes, then send their wives for little aerial jaunts and even let the children take a seat for a spin, progress in one important direction is made.

If in the present only slightly developed period of aviation, passenger flights of this kind are common, what a bright outlook there is for another year, when manufacturers will undoubtedly have increased the factor of safety, if they have not made some radical development with safety in view.

Certainly the pleasure side of flying has had its birth. It needs only slight encouragement to become sufficiently important to bring about the large sale of aeroplanes.

Every time a passenger is carried in an aeroplane, a little step towards this future is made. With many steps of this kind during the next six months and no fatalities, aviation in America will be well on its way.

To accomplish this the aviator must grow more careful rather than careless about his work and the condition of his machine, the manufacturer must never be satisfied with his product, but strive always to make it better.

The passenger must be encouraged.



Activity of Aviator and Builder

C. F. WALSH AT RATON, NEW MEXICO

Charles F. Walsh, who has been flying in New Mexico for the past two weeks, flew last week at Raton, N. M., which is situated 7,000 feet above sea level. On one of his flights he ascended to a height of 1,500 feet above the earth, making a total of 8,500 feet above sea level.

An aviation camp has been running in Detroit, Mich., near the Chalmers, Hudson and Lozier motor car factories, throughout the summer. It was formed by five enthusiasts, Frank C. Kuck, of Freemont, O.; Bill McRobble, of Alabama; Arch Smith, a former United States soldier, of California; Tom Ross, formerly an athlete, and Fred June, an engineer of Detroit. The men originally came together as a class of pupils to be taught by a so-called "professor," who took a few hundred dollars from each of them, promising to give them flying lessons, when he had neither planes nor engines in his possession. The men good-naturedly swallowed their resentment when they found they had been imposed upon, and established a camp, being resolved to teach themselves flying. During the summer they built two Curtiss-types, two Bleriot-types and a Demoiselle, and while none of them has become an expert aviator, three of them have made flights. The machines are now stored for the cold weather, while the men are working at various trades with a view to continuing their work next summer.

The Curtiss Aeroplane company has made arrangements for a number of passenger-carrying hydroaeroplane flights over the North river while the battleship fleet is assembled at New York. The maneuvers will last ten days. C. C. Witmer will pilot the machine and he will charge \$50 per flight to all who wish to take a trip with him. Those who desire to avail themselves of this opportunity should communicate with the Curtiss company at 1737 Broadway, New York.

James Lewis returned to Boston on Friday, October 27, after a year spent at the Voisin school at Buc, France. He has not as yet decided as to his future in this country, but he plans to set about the construction of a novel aeroplane, the result of his studies of the leading French types.

Charles Kaufman, of Falls City, Ore., has built a 20-foot biplane glider. He is 17 years old.

Ray Irwin, of Ogden, U., built a glider at his home and then was unfortunate enough to smash it up on his first trial flight. His first glide covered nearly 300 feet and ended with a smash. He landed in a patch of sagebrush and he received slight injuries.

THE DIARY OF FLIGHT

SATURDAY, OCTOBER 14.

Wickatunk, N. J.—O. G. Simmons, A. L. Welsh and T. O. M. Sopwith flew, carrying passengers.

SUNDAY, OCTOBER 15.

Youngstown, Ohio.—Paul Peck flew twice. On both flights he started from the Mahoning Club golf grounds and circled Wright field, where a football game was in progress. He was scheduled to land on the gridiron but found it so crowded as to be unsafe. On his second flight he climbed to a height of 1,500 feet.

Wickatunk, N. J.—T. O. M. Sopwith, with L. Thompson as passenger, flew to Thompson's country place, about four miles from here, for lunch. A. L. Welsh and Robert J. Collier also flew to Thompson's for lunch. It rained in the afternoon and Sopwith had to come back alone while Welsh carried O. G. Simmons on the return trip.

Wickatunk, N. J.—O. G. Simmons, T. O. M. Sopwith and A. L. Welsh flew carrying passengers.

TUESDAY, OCTOBER 17.

San Francisco, Cal.—Jeff De Villa flew.

THURSDAY, OCTOBER 19.

Albuquerque, N. M.—C. F. Walsh flew four times, on one flight carrying a passenger who weighed 175 pounds.

SATURDAY, OCTOBER 21.

Natchez, Miss.—J. A. D. McCurdy flew twice. Eugene Godet, an assistant and pupil of McCurdy's attempted a flight and smashed the machine against a tree while running over the ground after alighting.

Muskogee, Okla.—L. W. Bonney flew. He carried two women as passengers during the course of the afternoon.

SUNDAY, OCTOBER 22.

Raton, N. M.—C. F. Walsh flew, climbing 1,000 feet above his starting altitude of 6,000 feet above sea level. He was in the air 18 minutes. He made one other flight today.

Kinloch, Mo.—A. B. Lambert, F. O. Parmelee, Walter Brookins, Dr. Walden and G. W. Beatty flew.

MONDAY, OCTOBER 23.

Calumet, Mich.—Thomas McGoeys flew. His engine died and he was compelled to make a bad landing, smashing his plane but remaining uninjured himself.

Kinloch, Mo.—Howard W. Gill, and G. W. Beatty flew.

TUESDAY, OCTOBER 24.

Kalamazoo, Mich.—James K. Ward and James C. Mars flew. They gave an afternoon of exhibition events, including a race between themselves and races with automobiles and locomotives.

Kinloch, Mo.—Howard W. Gill, Walter Brookins and G. W. Beatty flew.

WEDNESDAY, OCTOBER 25.

F. Monroe, La.—Carl Mourfield made two flights of five and 10 minutes duration respectively.

Chico, Cal.—Thaddeus Kerns, an amateur, flew five miles at an altitude of 100 feet in a home made Curtiss type, equipped with an Elbridge motor.

Kinloch, Mo.—Maxson Lillie flew for 25 minutes on his first trip into the air alone. Howard W. Gill and G. W. Beatty also flew.

THURSDAY, OCTOBER 26.

Monroe, La.—Carl Mourfield made two successful flights at the Monroe Fair.

Garden City, Kans.—C. F. Walsh flew here in a snow storm. He was suffering with cold when he landed.

Kinloch, Mo.—Howard W. Gill, Maxson Lillie and G. W. Beatty flew.

FRIDAY, OCTOBER 27.

Kinloch, Mo.—Howard W. Gill, Maxson Lillie and G. W. Beatty flew.

SATURDAY, OCTOBER 28.

Kinloch, Mo.—Maxson Lillie flew qualifying for his pilot's license. Howard W. Gill flew carrying passengers. G. W. Beatty flew. Horace F. Kearney flew, describing five figure eights. Dr. Walden flew in his monoplane.

SUNDAY, OCTOBER 29.

Kinloch, Mo.—Howard W. Gill, G. W. Beatty, A. B. Lambert and Maxson W. Lillie flew.

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BULLETIN

To the Members of the Club:

The meeting at Kinloch, October 14 to 21, and on Sunday, October 29, brings forcibly to the minds of the members of the club the fact that they have in their possession a very fine aviation field, and, as it stands today, one that is in perfect condition to hold future events at a very little cost.

During the first meeting 14 machines were housed in the present hangars. The innovation of admitting the automobiles to the line of fence on the south side of the field, actually upon the flying grounds, was a great success, and added comfort to the occupants of the cars. The grass has grown so heavy on the field that after days of rain ill effects are not noticeable and automobiles can run across it without making a deep impression. The press, grandstands, telephone lines and fences are all in good condition.

It is predicted that there will be a great activity at the field during most of the winter. It is hoped that more members will avail themselves of their privilege to go out and make themselves on the field.

A. B. LAMBERT, President.

To the Members of the Club:

On the afternoon of Monday, December 4, Professor George Oscar James, Ph. D., will give a lecture in the hall Cupples, number one, on "Why Aeroplanes Fly." Members of the club and their families are particularly invited to be present. The University car which runs west on Olive street to Taylor avenue makes its loop directly opposite the Cupples building of the university. The lecture will begin at four p. m.

E. PERCY NOEL, Secretary.

AN ESSAY ON DANGER

Translated from an article by A. Odier in *L'Aero*.

It will be recollected that very widely-boomed experiments have taken place from the Eiffel tower and from the Fort of Vincennes, in order to demonstrate the efficacy of the parachute in case of accident. Since then these experiments seem to have been neglected, much to the delight of the guinea pigs, innocent victims of these unfortunate trials.

In these days, the fashion has changed, and stability is being sought for in the design of the machine itself or by the application of some mechanical attachment: but then, everyone is anxious to invent an automatic stabilizer which will do this . . . and that . . . etc.

In my opinion all this labor, for it concerns the pilots themselves, is destined to remain fruitless; as an instance the parachute, for the excellent reason that the aforesaid pilots have no desire to be acquainted with the danger that they run.

All those who have flown, however little, will agree that it is very unpleasant to wear a protective helmet. Do not run away with the idea that this assertion is made merely with the object of enforcing the point, for it must be admitted that there are very useful helmets which have saved the lives

of many aviators and I know of one who has since regretted having disdained this wise precaution against the possibility of capsizing in landing.

Nevertheless, the action of placing on one's head a weird object resembling a surgical appliance is always accompanied by a certain amount of apprehension, and one thinks "If I put this arrangement over my skull, it is because of the risk of getting it cracked. And if it is going to get cracked, I would much rather say goodbye to this mortal sphere."

Everyone is not as practical as Legagneux. This latter, in the days when he was mechanician to Ferber, used to don, while his master was away, his protective helmet and deliver an extensive eulogy on its virtues to the English visitors who came to inspect the machine. Then, to wind up, he would show the action of the helmet by diving to earth from the top of a ladder. If it were not for his nose, our Legagneux would have disappeared long since.

Have you ever had to sign a life insurance contract? When the representative explains to you the advantage of his system by which, he says, smiling, "Your next-of-kin will benefit, even if you are killed tomorrow," you naturally become possessed of a keen desire to get your hands round his throat.

How is one to reply to the inventor of the marvelous safety belt which holds you "Even if the machine falls absolutely upside down?" Undoubtedly very nice, but, thanking you all the same, I would very much rather excuse myself from its advantages.

Then, let us make this quite clear to the constructor whose machines by virtue of such-and-such a system is absolutely fool-proof. "My dear sir," he will reply, "I am perfectly aware that with your shock absorbers, or your parachute, my machines are rendered perfectly secure, but if I fit them, my clients flee away in sheer terror."

There are people who do not take the underground railway because they have seen the safety brake, the alarm cord, and the fire extinguishers, things which to them spell danger. There are also people who complain that some sailors do not know how to swim. This is not negligence, it is fatalism. They would be as much frightened in being forced to learn as if they were bluntly told that they were being taught in order to make good their escape from their shipwreck.

Steamship companies do not suspect the number of clients they lose by hanging lifeboats all around the bulwarks of their steamers. The prospect of finishing their voyage by mutually devouring each other is surely enough to cool the ardor of the most enthusiastic tourist. They would, moreover, be stimulated by the knowledge of the utter uselessness of those cockleshells and those water-tight compartments; so, for mercy's sake, hide the life boats and the life belts.

The automobile industry has suffered to an enormous extent from the fact that the press has systematically enlarged on the most trivial incidents and has fostered the misgivings of the general public.

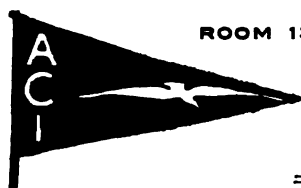
Aviation must be prevented from falling into a similar rut. We must study our machines as scrupulously as possible in order that critics may considerate to the one who has not sacrificed everything for the sake of security. But, on our part, we must never heighten the color of accounts of aeroplane disaster by the introduction of "The ghastly detail."

W. U. TO GIVE PUBLIC LECTURES

St. Louis, Mo., October 30.—Beginning Monday, November 4, at four in the afternoon, a series of lectures will be given every alternate Monday in hall number one of the Cupples Building at Washington University. The lectures will be open to the public and various themes of interest to everyone will be discussed by professors from different departments of the university.

Of special interest to those interested in aviation will be the lecture to be given on December 4, by Professor George Oscar James, Ph. D., on "Why Aeroplanes Fly." James is the professor of astronomy at the university who made an ascension in the balloon University City, on the night of May 18, 1910, with John Berry and Andrew Drew, to take observations of Halley's comet. The first of the series will be given on the afternoon of Monday, November 6, by Professor Edmund Henry Wuerpel of the St. Louis Art school, a department of the university. His subject will be "Pictures of Home Decorations." The university can be reached either by the Clayton or University cars for a single fare.

THE AERO CLUB OF ILLINOIS



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FOREIGN NOTES

News has come to hand that Train, the clever pilot-constructor, who made such an excellent showing in the circuit of Europe, has joined the Societe Astra, which company will henceforth retain the sole rights of manufacture of his interesting monoplane. He will thus be enabled, on account of the excellent facilities for manufacture that the Astra company possess, to fulfill the numerous orders he received as a result of his excellent performance in that classic race.

An exhibition has been promoted by the Ligue Nationale Aerienne for the purpose of encouraging inventions that will render the aviator's lot a less dangerous one. Many of the inventions are of the parachute order, and several protective helmets have been introduced. Perhaps the most noteworthy exhibit is that of Cremaux, who has devised a petrol tank which will not burst, and which consequently would be the means of preventing recurrences of the alarming fatalities which during past months have been attributable to fires.

With reference to devices for rendering aeroplanes automatically stabilized, the one that has undoubtedly been the most successful in this respect is the Dautre stabilizer. This particular device has been under practical test on a Maurice Farman biplane, piloted by Didier. Not long ago Didier flew in company with Lieut. Saunier from Vincennes to Rheims, arriving there at half-past eleven in the morning. Both these aviators were unanimous in its praise, for it kept the biplane on an even keel in spite of the terrible remous caused by the brilliant sun striking on the vast sandy plains between Meaux and Rheims. It is by such tests that the practical value of such appliances is determined, and it is undoubted that the use of a successful stabilizer, such as this one has proved to be, will do much to diminish the number of accidents caused by inexperience.

Roger Sommer is by no means less vigorous in carrying out experiments in weight lifting, for on the afternoon of October 18 he flew from Rheims to Mourmelon and back in 55 minutes, carrying six passengers. Contrary to the usual practice of carrying out such experiments with the aid of a load of lightweight school children, Sommer made his flight with full-grown adult passengers, whose total weight amounted to 968 pounds. In addition to this, his machine had to bear his own weight together with that of 18 gallons of gasoline and five gallons of oil.

To accommodate the numerous pupils that have joined Sommer's flying school, the latter has opened a new school of aviation at the La Vidamee aerodrome near Paris. Hangars are already in existence, and tuition will be given on the two biplanes and the single monoplane already there by the well-known pilot, Edouard Martin. Being so near Paris, Sommer expects to do big business in passenger flights.

Robert Loraine, the English actor, who attained fame in the aviation circles by his flight across the Irish Channel last

year, has signified another step in his successful career by taking over the management of the Criterion Theater, Piccadilly Circus, London. His first production is "Man and Superman," a play written by the famous G. Bernard Shaw. Among the members of his company are Miss Pauline Chase and Miss Madge Murray, both of whom are very keenly interested in aviation and have had many trips in the etherial blue with such pilots as Grahame-White and Hubert.

The French military authorities, with considerable foresight, have promoted a meeting at Rheims, at which all the noted French machines will be tested to ascertain their value from a military standpoint. The tests commenced on October 1, and the results will be awaited with interest. They are three in number. Each machine will have to carry a useful load of 700 pounds, and with this weight on board their landing capacities will be tested on different surfaces, such as long grass and ploughed fields. For the second test the machine is to undertake a cross-country journey, and the speed on this trip, to pass the tests, is to be in excess of 36 miles per hour. This should not be a very difficult condition in these days of the advancement of flying craft. In addition to these two tests, the machines will be required to rise to a height of 1,600 feet within a quarter of an hour. This also should not prove difficult. For a final test the machines will have to undertake a cross-country flight of 200 miles without landing, carrying a useful load of 650 pounds. This flight must be undertaken on the days specially selected by the committee controlling this examination. Lucky will be the constructor who comes out on top in these tests, for the winning machine will be purchased from him for a sum of \$20,000, and he will receive orders for 10 more at the rate of \$8,000 each. This is not all, for he will receive an extra \$650 for each mile in excess of the minimum speed stipulated.

At the Bleriot school at Etampes, Anzani has of late been carrying out tests on a new six-cylinder air-cooled motor of 50-60-horsepower, fitted with a new system of lubrication. On October 4, on a Bleriot machine, equipped with one of his new engines, Anzani flew for more than three hours at a speed of 60 miles per hour, until his fuel tanks were exhausted. Anzani is, we believe, the only constructor who personally tests the engines in flight, and his latest product certainly looks like upholding the excellent reputation that his products have earned.

The young Belgian aviator, John Verrept, who pilots a Morane monoplane, proposes to make an attempt to beat the height record at the Vidamee aerodrome, where the Morane school is established. Just lately he made a trial flight and succeeded in attaining an altitude of 8,000 feet in 21 minutes. For this attempt he is using a machine specially designed for rapid climbing.

Marc Pourpre, a young French aviator, who was considerably interested in the doings of the Wright brothers when they first visited Europe, and who lately has been doing much good flying at Roubaix on his Bleriot-Gnome, intends to surprise the whole aviation world by a particularly daring feat. Just exactly what this feat is, is a secret which Pourpre is keeping strictly to himself, but this much we know, that his flight will take place over the sea. It will be remembered that this young aviator apparently possesses a strong partiality to flying over water, for he lately effected a double crossing between Boulogne and Dover.

Louis Bleriot has, we hear, been personally conducting tests of his latest and wierd machine—the Canard—which we illustrated last week. The racing machine, of which we also gave a short description in the last issue, has been put under test by that celebrated pilot, Alfred Leblanc, who has obtained a speed greater than those terrifying 100 horsepower machines which represented France in the Gordon Bennett cup race in England this year.

The tests which the military authorities are conducting at Rheims have led to the introduction of many interesting points in the design of landing chassis.

AERO MART

These Notices Bring Results

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AVIATOR—Wanted, licensed monoplane aviator. Give particulars as to instruction and experience. Box 163, Aero, St. Louis.

SITUATIONS WANTED.

ASSISTANT—Young man desires position with firm or as aviator's assistant, with prospect of becoming aviator. I have the nerve to stay with it. Best references furnished. Address E. R. Childress, aeroplane model builder, Bells, Tex.

ENGINEER—Graduate technical engineer with several years' experience in experimental engineering, desires technical or commercial position with manufacturer or dealer in aeronautical apparatus, involving either development work on apparatus, or the commercial handling of supplies and products. Willing to qualify as aviator. Location immaterial; south or west preferred. E. S. Burnett, Sibley Mechanical Laboratory, Ithaca, N. Y.

SAM A. TICKELL is open for a position designing, building or flying. Has had some years of experience in building and has made many flights. Curtiss-type preferred. Must be first-class machine and motor. If you have these I can make money for you. 543 West One Hundred and Twenty-ninth St., New York City.

YOUNG MAN, 22, temperate, technical education with factory and road experience on monoplanes and biplanes, wishes employment, preferably with chance of becoming aviator; references. Moderate salary. Verdier Burwell, 161 W. Thirty-sixth St., New York.

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BIPLANE—Wanted, a perfect biplane or monoplane. Must have flown or standard make. Flyable. Full details and photo first letter. Box 145, care Aero, St. Louis.

MOEDEBECK HANDBOOK—Wanted a copy of Moedebeck's Handbook. Will pay \$2 for second-hand copy in good condition. Box 200, care Aero, St. Louis.

MOTOR—Wanted, Hall-Scott, Gnome or Anzani. Box 160, Aero, St. Louis.

MOTOR—Wanted, good aero motor. State make, cost price, lowest cash offer immediate acceptance, horsepower, photo if possible, how long used, etc. Box 148, care Aero, St. Louis.

PHOTOGRAPHS—Wanted, photographs of international race at Kansas City, Berlin II, Gericke, Lahm, balloon leaving grounds, aeronauts in basket before start, map of race. Warren Oehrle, 2567 Dodge St., Omaha, Neb.

FOR SALE.

AEROPLANE—Military-type Curtiss machine with 60-horsepower guaranteed motor. Good flyer. Best cash offer. Box 165, Aero, St. Louis.

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CARBURETER—For sale, one Schebler 1½-inch aluminum carbureter; complete and ready for attachment to aviation engine. Very slightly used. A. V. Reyburn, Jr., 5305 Delmar Boul., St. Louis, Mo.

CONSERVATIVE MEN are exacting in their requirements. Quality first considered, then price. Advise us your needs. Aero Supply company, Boston, Mass.

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MOTOR for sale, 25-30-horsepower Cameron engine; in excellent condition. Complete with magneto, carbureter and propeller. Price, \$300. G. F. Hess, Corvallis, Ore.

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UP-TO-DATE PLANES AND MOTORS—Nieuport monoplane, latest type passenger-carrying machine fitted with 70-horsepower Gnome motor, holder of all American records for speed and altitude with passenger; Grahame-White Baby biplane fitted with 50-horsepower Gnome motor; Farman-type biplane fitted with 50-horsepower Gnome motor, two 50-horsepower Gnome motors. All ready for immediate delivery in New York. For prices and full particulars apply Box 50, care Aero, New York.

FINANCIAL.

MANAGER—Wanted, person to act as manager and take interest in aviation company. Some capital required. Address Box 159, Aero, St. Louis.

MOTOR—Wanted, a person or company to furnish me with a motor for my plane to be used for exhibition flying. Willis C. Brown, 1006 Bergen St., Brooklyn, N. Y.

WANTED—Financial assistance to help inventor secure patents and put on market a positive automatic stability device; can be attached to any type of aeroplane at small cost and weight (enormous demand). Will give half-interest to backer, or sell outright. Erwin Roberts, 762 Main St., East Hartford, Conn.

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MODEL PROPELLERS—6-inch 30 cents, 10 cents each additional inch; ball-bearing shafts 30 cents, reed and rubber 1 cent per foot. Catalogue for stamp. Short-Canniff Co., Marlboro, N. Y.

MODEL AEROPLANES—Nieuport, Bleriot, Antoinette or Curtiss, scale models. Price \$3. Curtiss \$5 knockdown half price. K. A. Pouch, 83 Low Terrace, New Brighton, N. Y.

MOTOR—Our new all-aluminum cellulose turbine is ready for your model. This motor will deliver $\frac{1}{2}$ -horsepower for three minutes. Complete motor 6 ounces. Watch it take prizes, but be sure to have one on your model. \$2 post-paid. The Co-Operative Aero association, Muncie, Ind.

INSTRUCTION.

LEARN to fly in two weeks. Students operating biplanes alone the first day; flying daily, weather permitting. Competent instructors in attendance. Aeroplane construction; also care and motor knowledge free. No bond required for breakage, terms very reasonable; write for terms. Aviators and aeroplanes supplied for exhibitions. Francaise Americaine Co., Mineola, L. I., N. Y.



1,006,074, October 17, 1911.—Thomas H. E. Folger, Corral, Idaho. A flying machine embodying blades or planes, frames thereof, means to rotate said blades and frames, and means to hold said frames against rotation and additional means to position and maintain said blades in a horizontal plane.

1,006,106, October 17, 1911.—Leon Marie Joseph Clement Levavasseur, Puteaux, France, assignor to La Societe Antoinette, of same place. A flying machine embodying a pair of wings extending transverse to the line of flight, a rigid stay to which the front edges of said wings are secured, a pair of pivoted stays to which the rear edges of said wings are secured, each of such stays being attached to the corresponding wing substantially throughout the length of the same, said latter stays being pivoted at a common point, and mechanism for simultaneously moving said latter stays about such pivotal point to raise one and lower the other, whereby a helicoidal deformation of the wings is produced.

1,006,171, October 17, 1911.—Amos A. Wyckoff, Santa Cruz, Cal. An aerial machine consisting of a main frame, a flattened buoyant gas holder fixed in the main frame, supplemental frames at opposite ends of the main frame having outer portions pivotally connected to the ends of the main frame, and thence extending inwardly between the sides of said main frame, buoyant gas holders spaced from each other and fixed to the upper and lower members of said supplemental frames, and means by which said supplemental frames may be tilted up or down with relation to the main frame.

1,006,209, October 17, 1911.—Spencer Heath, Washington, D. C. A screw propeller blade having variable pitch at different blade lengths, the pitch being maximum in the region beyond the half-blade length from the axis and diminishing therefrom toward either extremity of the blade.

1,006,282, October 17, 1911.—Carl E. Ritter, Petaluma, Cal. An airship comprising an elongated tubular flat bottomed body extending lengthwise in the line of flight and of substantially frusto-diamond form in cross-section, a vertically rotatable driving propeller at the forward end of the body, a direction rudder at the rear end of the body, and fore and aft series of horizontally rotatable lifting and sustaining propellers mounted upon the top of the body in close proximity to each other and to the upper surface of the body.

1,006,335, October 17, 1911.—Samuel S. Yarrington, Wilmington, Del. A flying machine including a main frame, upright frames at the front and rear of the main frame, transversely extending supporting surfaces carried by said upright frames, longitudinally extending supporting surfaces hinged at their rear ends to the extremities of the rear upright frame and arranged at right angles to said transverse supporting surfaces, said longitudinally extending supporting surfaces projecting forwardly at an upward angle, means yieldingly supporting said connecting the forward end of the longitudinally extending supporting surface with the front upright frame, and means connected with the front ends of said longitudinally extending supporting surfaces for depressing the same.

1,006,592, October 24, 1911.—Peter Peterson, San Francisco, Cal. A flying machine comprising a car body, a plurality of planes supported above the car body, means to change the lateral and longitudinal angular relation of the planes to the car body, and longitudinally sliding means upon the car body for changing the relation of the point of support of the planes to the center of the car body.

1,006,624, October 24, 1911.—Henry Michael Benson, Crescent, Nev., assignor of three-fourths to Arthur Boyce and one-fourth to George Warren Condon, Los Angeles, Cal. A flying machine comprising a body member, horizontally disposed aeroplane wings pivoted at each side of the body member, horizontally disposed head and tail aeroplanes pivoted to the front and rear ends of the body member, and controlling means for simultaneously and correspondingly varying the inclination of the wings upwardly or downwardly from a horizontal position and for simultaneously and correspondingly varying the inclination of the head and tail aeroplane members, said controlling means being connected to vary the inclination of the wings reversely to the inclination of the head and tail aeroplane members.

1,006,734, October 24, 1911.—Thomas F. Dunn, New York, N. Y. A dirigible airship provided with a propeller mechanism involving two parallel shafts provided with reversed cone pulleys, the base portion of one of said pulleys being formed separately therefrom and being rotatable on the corresponding shaft and adapted to serve as a loose pulley and brake wheel, and a brake device operating in connection therewith.

1,006,846, October 24, 1911.—James Hayton, Salt Lake City, Utah. A flying machine having a pair of revolving planes on each side thereof, said planes comprising a hub, blades, disks for securing said blades to said hub, said blades having a slight pitch, reinforcing metallic strips located on the outer rims of said blades, and guy wires for transferring the strain on said blades, connected to said disk and to the corners and centers of said blades.

1,006,967, October 24, 1911.—Samuel B. McHeary, Chicago, Ill. A flying machine including a supporting plane, lateral planes, a driving shaft mounted in the frame work of the first referred to plane and having said lateral planes pivoted thereon, said lateral planes having an inclined plane fixed thereto at their rear ends, propelling mechanism, and adjusting means for said lateral planes with their rear inclined plane.

1,006,998, October 24, 1911.—Thomas F. Dunn, New York, N. Y. A dirigible airship embodying a balloon or gas container, and folding gas magazines supported longitudinally of the bottom thereof, and in communication therewith, said gas magazines being provided with one or more automatic safety valves, which are opened outwardly by the pressure of the gas when it reaches a certain point and closed when the pressure is reduced.

CORRESPONDENCE

Blue Prints Needed

To the Editor of AERO:

I am building a monoplane of the Nieuport type. What camber should I use? At what angle should the wings be set? How would I balance this machine? How do you find the center of pressure and the center of gravity? How many square feet should I have in the elevators? Also in the fixed stability tail? Do you think my engine has power enough? Do you have to balance the machine differently when using a non-lifting tail? ST. JAMES F. BLANCHARD.

We are afraid that in order to give you satisfactory answers to the above, we should have to go into a very lengthy treatise on the construction of a Nieuport. We would suggest that you purchase blueprints or specifications from one of the firms handling them. The motor you have should furnish the requisite power.

Operation of a Seven-Cylinder Rotary

To the Editor of AERO:

Can you explain how a seven-cylinder rotary engine gets a suction in the crankcase sufficient to supply the cylinder with gas, as I cannot figure out why the displacement of one piston traveling outward is not equalized by an opposite piston traveling inward? JAMES H. SPADE.

You do not seem to be quite clear as to the construction of a motor of the revolving type. The mixture is not taken into the crankcase. The carbureter is affixed at the hollow end of the crankshaft. On the one throw of the shaft is a crankring, consisting of one connecting rod, known as the master-rod, to which is affixed six other connecting rods. All of these are hollow and connected with the hollow space in the crankring, through which, from the crankshaft, the mixture passes into each connecting rod. At the head of each piston is found an automatic intake valve. You may simply consider the whole assemblage of crankshaft, crankring, and the several hollow connecting rods as an ordinary intake manifold. When each piston travels out of the cylinder, the suction causes its valve to open and the mixture is taken in. The fact that the pistons and connecting rods are moving need not perplex you, as they are stationary with respect to their respective valves.

See Gnome motor description in AERO, Vol. I., No. 4

Efficient Camber

To the Editor of AERO:

What camber is best adopted to ordinary flying, in a surface of five-foot chord? Also regular Curtiss camber and spread of machine? THOS. SPAULDING.

The most efficient camber for a surface of which you write is $2\frac{1}{4}$ inches to $2\frac{3}{4}$ inches. A greater camber gives slower flying speed, makes necessary more power, and destroys the gliding efficiency of the machine. The Curtiss camber varies from about $2\frac{1}{8}$ to $2\frac{3}{4}$ inches; spread 26 feet.

Tail Surfaces and Rudders

To the Editor of AERO:

Are there any monoplanes being successfully operated without fixed horizontal following surfaces? Why should not a horizontal rudder, such as used on the Wright biplane, work successfully on a monoplane if it was balanced so as to take the weight off the tail? CHAS. A. BUTLER.

The Nieuport and the Demoiselle are types of monoplanes using non-lifting tail surfaces. A surface like that on the Wright would unquestionably be efficient on a monoplane properly built.

Curtiss Construction Details

To the Editor of AERO:

What method of lacing does Curtiss use on his double-surfaced machine? (2) Does a headless Curtiss need larger rear elevators than the other Curtiss machines? (3) How is it balanced so that a wheel or skid under the tail is not necessary? (4) Do the ribs in this machine go over the rear wing beam as in the single surface machine?

F. E. WYSONG.

The new Curtiss is built in sections, each section being independently covered, and no lacing is used. (2) Yes. (3) The Curtiss machine is supported on three wheels, a leading wheel, and two rear ones about directly under the trailing edge of the main planes. (4) The ribs are built flush with the rear wing beam, that part of the rib which extends out to the rear of the beam being a short separate piece, the joint being made at the wing beam with a piece of thin sheet tin and brads.

A Practical Test

To the Editor of AERO:

Under the head, "What's the Matter with Aviation?" Hugo Gibson says, "Principally, that the whole industry is bred and fed upon hot air." Gibson's subsequent remarks are his best proofs. The lack of scientific methods is indeed deplorable, but very few intelligent American engineers are contributing their suggestions to the struggling fledglings or the prospective purchaser of aeroplanes. If you ask a technically trained man which is the best monoplane and which the best biplane and then ask him how the two compare, he will be at a loss for any sort of positive answer. And why?

There is undoubtedly merit in an engineering education, but the lack of its correct and useful application to present-day aeroplanes is most noticeable. There is a "technical board" of the aeronautical society and yet what has this board contributed to the science? Might it not be supposed that the findings and guidance of such a board would be a help to aviator and builder? Such guidance has been noticeably lacking at aviation meets. With the one rare exception, the most practical test of an aeroplane has been left off the lists of events.

You have guessed it? You knew it all along. The range of speed of any given aeroplane, whether monoplane or biplane, is its vital factor. One must, of course, assume structural integrity. At the Boston meet in August, 1910, there was a prize for slow flying. Brookins won this by circling the course at the rate of 22 miles per hour. Immediately there is enlightenment. The same machine could circle the course at the rate of 45 miles per hour. The range of speed was, therefore, approximately 23 miles per hour. Obviously, the contest would have been won by Brookins had range of speed been the event.

It is with this range of speed that the aviator does everything. It may be defined as "the difference between staying up and coming down." The definition of flight must contain the idea of forward motion through the air. Likewise every result accomplished with an aeroplane is derived from forward motion. With 23 miles per hour of forward motion to spare, one has more scope than when this range is but four or five miles. The carrying of passengers, fuel, mail and hydroplane pontoons reduces this range. So, also, does the use of every control. Those controls which direct the machine with the least use are the best.

Let the indulgent reader speculate for himself in regard to knowing the range of speed of every well-known type of aeroplane. I may add that my own personal observation places the first five as Nieuport, Breguet, Wright, Curtiss and Farman. Accurate figures I lack, and so do you. Let us then demand for our "technical boards" that every F. A. I. meet shall have a "Range of Flying Speed" contest wherein all the entrants circle the same course at their slowest and then their fastest time. Barograph reading not to vary more than 50 feet and with limits to both outer and inner dimensions of the course. Perhaps such a contest would shed more light upon the eligibility status of the aeroplanes than the certificate of the pilots flying them.

ANTONY JANNUS.

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Ray Wilcox, said to have been connected with an aeroplane factory in Detroit, is now building planes in Parma, Mich. It is also reported that his third plane has been delivered to an official of the Chinese government, who is now practicing with it on a field near Parma. The Chinaman travels under the Anglicized name of J. Crockmann. Wilcox has delivered two other biplanes, one to T. Tanner, who smashed up near Toledo, recently, and one to parties in Arkansas.

It has been found that no record was made in this paper of a balloon trip made by the Salt Lake City on Saturday, September 9. The balloon was piloted by R. N. Campbell of the Aero Club of Utah, and he carried as passengers, Capt. H. E. Honeywell, of St. Louis, and J. Frank Judge, of the Aero Club of Utah. The trip was intended as a test flight, but when the weather conditions were found to be good, the aeronauts let the balloon drift along for three hours, traveling a distance of 50 miles. The start was made at 9:11 in the morning from the Aero club grounds and Eighth South and Main streets and the landing was made five miles east of Huntsville, U., at 11:54.

Lindsey Hopkins, of Atlanta, Ga., has bought a Curtiss biplane and it is his intention to use it at county fair exhibitions. Thornwell Andrews has been chosen to fly the machine. On October 14 this aviator made a 35-minute flight over Greensboro, N. C., winning a cash prize of \$1,500.

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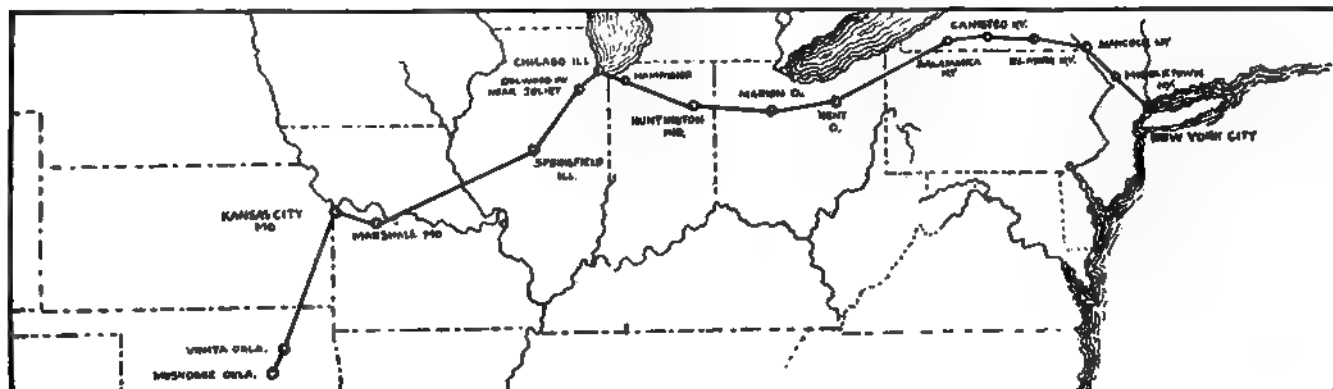
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MAP SHOWING FIRST SECTION OF RODGER'S ROUTE,
NEW YORK TO MUSKOGEE, OKLA.

Pasadena, Cal., November 5.—C. P. Rodgers came to earth here this afternoon shortly after four o'clock, bringing to an end his great cross-country flight, which marks an epoch in the history of aerial transportation.

Leaving New York, September 17, 49 days ago, he has traveled approximately 4,500 miles, including detours when lost, and has shattered all records for cross-country flight distance. His achievement will go down in the annals of aviation as a milestone in its development.

Rodgers had a number of smashups throughout his trip, though he escaped personal injury. He used enough spare parts to make up seven complete biplanes. The bad luck seemed to pursue him until the very last, for his flying both on Saturday and today was retarded by engine trouble and minor breaks. Although it has taken him 49 days by the calendar to cross the continent, his actual flying time is 4,924 minutes, or three days, 10 hours and four minutes. During this time he covered a distance given out officially as 4,231 miles, making his average speed per hour, 51.9 miles.

The trip is now complete, although Rodgers insists that he will go through the formality of flying from here out over the Pacific, 20 miles away, in order to complete the ocean-to-ocean flight. This flight probably will be attended with no little ceremony, for the people are greatly excited over his arrival, and they cannot idolize him enough. Rodgers' mother and wife, who have been following him across the country on a special train, did not arrive until nearly an hour after he alighted.

Rodgers was delayed for some time at Pomona, while his mechanics adjusted the motor. He was first seen by observers in the astronomical laboratory on Mount Wilson, from where word was flashed to the city by telephone.

An enormous crowd had gathered at Tournament park to watch his landing, and when he had come to earth, after a short period of graceful circling, and a sudden swift dip to the ground, the people rushed on the field, surrounded the

C. P. RODGERS LEAVING EL PASO, TEX.

machine, and crowded the aviator until he complained that they would do his ribs more damage than the worst fall he had ever had.

As soon as the field could be partly cleared, Mrs. H. E. Davis, wife of the president of the Pasadena Board of Trade, presented Rodgers with a huge bunch of California chrysanthemums. Next a group of the officials seized him and wrapped him in the folds of a large American flag, placed him in a touring car, and drove him about the field, carefully steering through the demonstrative crowds. Rodgers tried to stand up once or twice, but the folds of the flag tripped him, and threw him back in his seat.

In Banning, Rodgers interrupted the only diversion of the year, a snake dance by the Mojave Indians, when he came to earth there on Saturday. He had planned to go on to Pasadena on this day, but decided to alight when he found his gasoline tank had sprung a leak. It is asserted, had he continued flying with the tank unnoticed, he would have run out of gaso-

line at the very time when he was crossing the mountains of the Sierra Madre range.

In Tucson, Ariz., on November 1, Rodgers and R. G. Fowler met and shook hands, each wishing the other luck for the future.

"I hope you get there," said Rodgers.

"Thank you," replied the other, "and I hope the same for you. You have had lots of hard luck."

"We've both had that," was the reply that covered in a few words a multitude of hardships.

In an interview here, Rodgers said he thought it impossible to cross the continent in 30 days. He also said he thought someone would duplicate his record of 49 days before another year had passed.

The following is a complete table of Rodgers flight from New York to Pasadena. The time is subject to correction in certain instances:

SUNDAY, SEPTEMBER 17.			
Town.	Time.	Mileage For Day. Trip.	
Left New York, N. Y.	4:33 p. m.		
Arrived Middletown, N. Y.	6:18 p. m.	84	84
MONDAY, SEPTEMBER 18.			
Smashed machine in leaving Middletown.			
TUESDAY, SEPTEMBER 19.			
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WEDNESDAY, SEPTEMBER 20.			
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THURSDAY, SEPTEMBER 21.			
Left Middletown, N. Y.	2:21 p. m.		
Arrived Hancock, N. Y.	3:39 p. m.	95	179
FRIDAY, SEPTEMBER 22.			
Left Hancock, N. Y.	11:13 a. m.		
Stopped at Throop, Pa., and Warren.			
Arrived Elmira, N. Y.	3:27 p. m.	110	289
SATURDAY, SEPTEMBER 23.			
Left Elmira, N. Y.	2:18 p. m.		
Arrived Canisteo, N. Y.	3:27 p. m.	55	344
SUNDAY, SEPTEMBER 24.			
Left Canisteo, N. Y.	10:00 a. m.		
Arrived Salamanca, N. Y.	2:45 p. m.	91	435
MONDAY, SEPTEMBER 25.			
Repairs.			
TUESDAY, SEPTEMBER 26.			
Repairs.			
WEDNESDAY, SEPTEMBER 27.			
Rain.			
THURSDAY, SEPTEMBER 28.			
Left Salamanca, N. Y.	11:30 a. m.		
Arrived Kent, O.	5:10 p. m.	204	639
FRIDAY, SEPTEMBER 29.			
Repairs.			
SATURDAY, SEPTEMBER 30.			
Left Kent, O.	9:50 a. m.		
Arrived Marion, O.	12:26 p. m.	113	752

SUNDAY, OCTOBER 1.

Left Marion, O. 8:55 a. m.
Lost in storm. Stops Geneva.
Arrived Huntington, Ind. 4:30 p. m. 127 879

MONDAY, OCTOBER 2.

Smashed in leaving Huntington, Ind.

TUESDAY, OCTOBER 3.

Repairs.

WEDNESDAY, OCTOBER 4.

Repairs.

THURSDAY, OCTOBER 5.

Left Huntington, Ind. 11:30 a. m.
Stopped at Aldine.
Arrived Hammond, Ind. 5:44 p. m. 122 1001

FRIDAY, OCTOBER 6.

Repairs.

SATURDAY, OCTOBER 7.

Repairs.

SUNDAY, OCTOBER 8.

Left Hammond, Ind. 11:25 a. m.
Left Hammond, O. 11:25 a. m.
Arrived Chicago, Ill. 11:59 a. m.
Left Chicago, Ill. 4:01 p. m.
Arrived Delwood Park, Ill. 5:45 p. m. 62 1063

MONDAY, OCTOBER 9.

Left Delwood Park, Ill. 8:25 a. m.
Arrived Peoria, Ill. 1:00 p. m.
Left Peoria, Ill. 3:00 p. m.
Arrived Springfield, Ill. 5:45 p. m. 181 1244

TUESDAY, OCTOBER 10.

Left Springfield, Ill. 8:35 a. m.
Stopped at Nebo, Ill., and Thompson, Mo.
Arrived Marshall, Mo. 4:31 p. m. 214 1458

WEDNESDAY, OCTOBER 11.

Left Marshall, Mo. 8:32 a. m.
Arrived Blue Springs, Mo. 9:50 a. m.
Left Blue Springs, Mo. 10:50 a. m.
Arrived Kansas City, Mo. 11:35 a. m. 72 1530

THURSDAY, OCTOBER 12.

Delayed in Kansas City.

FRIDAY, OCTOBER 13.

Delayed in Kansas City.

SATURDAY, OCTOBER 14.

Delayed in Kansas City.

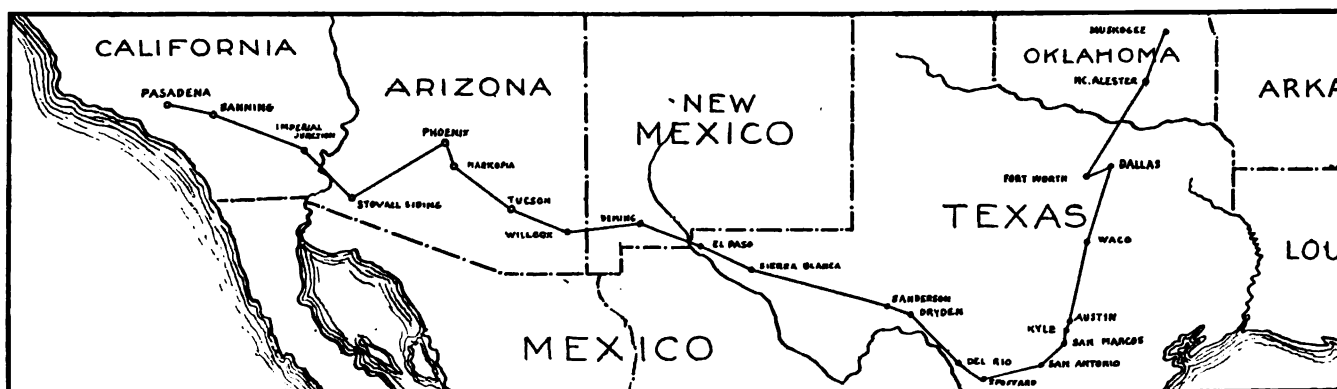
SUNDAY, OCTOBER 15.

Left Kansas City, Mo. 11:55 a. m.
Arrived Vinita, Kans. 6:45 p. m. 189 1719

MONDAY, OCTOBER 16.

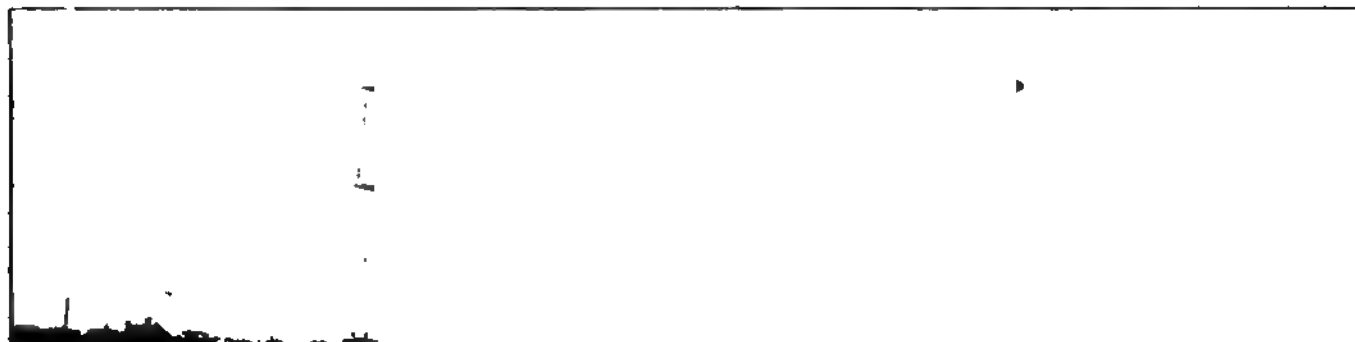
Left Vinita, Kans. 7:45 a. m.
Arrived Muskogee, Okla. 9:15 a. m. 64 1783

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RODGER'S COURSE FROM MUSKOGEE, OKLA. TO PASADENA, CAL.

BURGESS HYDRO-AEROPLANE IS SUCCESSFUL



CLIFFORD WEBSTER IN BURGESS-WRIGHT HYDRO-AEROPLANE AT MARBLEHEAD, MASS.

Though in many other respects the United States lags behind Europe in the practical development of aviation, this country leads the world in the building of aeroplanes that can start from and alight on the water—that is hydro-aeroplanes. The latest successful American hydro-aeroplane comes from the factory of the Burgess company and from Curtiss of Marblehead, Mass. This machine was first put in the waters of the harbor at Marblehead less than two weeks ago, and has been flown nearly every day since by either Clifford Webster or Phillips Ward Page. Mr. Starling Burgess also has piloted the machine.

An aero correspondent who visited Marblehead was surprised at the ease which the hydro-aeroplane lifted from the water. As was to be expected, when running slowly over the waves the flyer threw up quite a spray, but after it had once acquired speed there was practically no fuss. Webster and Page say that once in the air, the hydro-aeroplane is just as easily handled as the ordinary biplane. If anything, the floats give steadiness to the machine. Passengers have been carried easily in the "hydro."

J. Greeley Curtis believes there is a great future for the hydro-aeroplane, because, he says, they enable amateurs to take up flying without fear of damaging their machine or themselves on terra firma. He even goes so far as to predict that next year the aviation schools will teach flying in hydro-aeroplanes. Mr. Curtis points out that the machine is its own safety device, for on very windy days it is impossible to launch the craft on account of the waves.

The hydroplanes were specially designed by W. Starling Burgess, the well-known racing yacht builder. Each hydroplane has two steps, the middle step being half-way back from the bow. The "boats" are 14 feet long and two feet wide, narrowing slightly towards the bottom. They are 10 inches in depth and as each one can carry 1,000 pounds there is a large reserve buoyancy. These hydroplanes differ from the earlier types in that they have curved bottoms at the bow, which gives them greater strength and makes them safer in case of a steep dive into water. The "hydros" are trussed the entire length with deep spruce trussing, resembling bridge construction, which distributes the load evenly and at the same time permits light construction. They add approximately 100 pounds to the weight of the whole machine. The tops are closed with heavy cotton cloth, covered with several coats of paint. An ingenious device has been installed to prevent a dragging vacuum forming behind the step of the hydroplane. This device consists of two very small tubes running from the step to the top of the floats. These tubes "ventilate," so to speak, the space where a vacuum would form.

The aeroplane to which these pontoons have been fixed is the Burgess, Model F, fitted with a Wright 35-horsepower motor. The floats are attached by ash uprights which are built in the structure of the "hydros" and are fastened to the lower surface of the aeroplanes in the same manner as the skids. Triangular sails, like inverted jibs, have been placed between the two main planes to balance the side surfaces of the hydroplane.

CURTISS TRIADS ARE BUSY AT MANY POINTS

New York, N. Y., November 4.—The hydroaeroplane has played a prominent part in the aviation doings of the past two weeks. In this branch of flying nothing has equalled in importance the achievement of the naval aviators, Lieut. T. G. Ellyson and Lieut. G. H. Towers when, on October 25, they drove the Curtiss "Triad" 145 miles in 147 minutes. Sailing high over the waters of Chesapeake Bay, these aviators eclipsed all previous performances in hydroaeroplanes. Ellyson and Towers flew from the naval aviation school at Annapolis, Md., to Buckroe Beach, Va. Hugh Robinson's flight down the Mississippi and C. C. Witmer's exhibitions at Atlantic City and around the assembled fleet in the Hudson river at New York are the other recent convincing demonstrations of the fact that flights in the new type of machine are a growing phase of aviation.

The flights of the two naval lieutenants gave striking proof of the value to the navy of the hydroaeroplane fitted with double control. The control of the machine was first taken by

one man and then by the other. So safe did these naval officers feel, it was thought unnecessary for a boat to follow them on their remarkable journey. Lieut. Ellyson, in writing to Glenn H. Curtiss, gave the following interesting account of the flight:

"I steered for the first half hour and then Towers steered for the same length of time. At the end of an hour the water connections on top of the radiator began to leak and water went on the magneto, causing the engine to miss. Towers climbed over and repaired the leak the best he could and had to hold the water pipe in place, which he did for over an hour while I drove.

"After two hours of flying, having covered 147 miles, the oil gauge seemed to be getting low and we decided to land. This we accomplished in a six-foot surf with a 20-mile wind behind us. I ran the machine high on the beach, coming in at full speed, just touching the crests of the waves. Much to our surprise the boat was not injured in the least."

Witmer was disappointed with his experience in New York. He wanted to fly over the big fleet every day it remained in the Hudson, but owing to the stiff winds that shot from over the high Palisades he was able to make only two or three short trips.

PIONEER INVENTOR IS MARTYR

San Jose, Cal., October 31.—Prof. John J. Montgomery of Santa Clara college died here this afternoon from the effects of a fall from an aeroplane glider with which he was experimenting in the foothills near Evergreen. He sustained injuries to his back and to the base of the brain. Mrs. Montgomery was watching her husband when the tragedy occurred. According to Mrs. Montgomery, the machine was about 20 feet from the ground when it fell.

Montgomery was the inventor of a double monoplane glider which, according to his claim, was the first in the country to use wing warping on curved surfaces. The glider was very successful when operating without power, and the machine at one time was guided safely to earth from a height of 4,000 feet, having been dropped from a balloon. Many experiments were made during the last few years to put an engine into the machine, but so far as is known the attempts were never successful.

He was born in 1861. His father was assistant attorney general of the United States. In 1877, two years before his graduation from St. Ignatius college, Montgomery became interested in aeronautics, but it was not until 1883 that he built his first flying machine, a flapping-wing contrivance that at once persuaded him that success was not to be found in this direction. During 1884 and 1885 three gliders were built, one of which, with wings curved to imitate those of the seagull, made a flight of 600 feet. This machine at once demonstrated the value of curved lifting surfaces. It was equipped with ailerons hinged to the rear of each wing. In the third machine, stability was maintained by pivoted wings.

The most startling flight of all, and that which attracted world-wide attention to the Montgomery machine, was made on April 29, 1905, when Daniel Maloney, an aeronaut, attached the glider, which by this time was equipped with warping wings, to a hot-air balloon and ascending to a height of 4,000 feet, succeeded in guiding the machine safely to the earth. These tests were continued until three aeronauts had become familiar with the Montgomery machine. Experiments ended when Maloney was killed when one of the tail members of the machine was broken as the balloon left the earth for an exhibition.

It is hoped by many that the Smithsonian library will take an interest in Mr. Montgomery's work, for the results of his experiments would be a great help to designers and experimenters in aeronautics. When it is considered that his first glide was performed approximately eight or nine years before Lillenthal's experiments and that it ranked well in distance with them and with the best subsequent trials of Pilcher, Chanute and the Wrights, it shows that Montgomery had a machine that was far in advance of its time and one worthy of development.

ENTERTAINS WITH SANE FLYING

San Francisco, Cal., November 4.—Frank Bryant, flying a Curtiss biplane under the colors of the De Vaux aviators, completed a four-days' flying engagement at the apple annual at Watsonville, Cal., on October 14, after making two exhibition flights each day and winning the hearts of the large audience who gathered to see his well-balanced performances.

The shortest flight made by Bryant was eight minutes and the longest over 30. He made great circles of the surrounding country, flew over Watsonville and gave excellent exhibitions of starting and landing, but attempted nothing outside of straight, sane and safe flying.

Bryant is now at Merced, where he is under contract to initiate into the mysteries of the flying game a couple of amateurs who have built their own machines. He announces he will fill all dates possible this winter, and expects to give a number of exhibitions throughout California. Bryant is under the direction of Norman De Vaux, who represents the Curtiss company in San Francisco.

BURGESS HYDROS FLY ALL WEEK

Marblehead, Mass., November 1.—Many successful flights have been made here during the past week by the Burgess hydroaeroplane, the pilots being W. Starling Burgess, the machine's inventor, Harry N. Atwood, Phillips W. Page and Clifford L. Webster. On Saturday, Burgess went aloft for a thrilling flight over Marblehead, Beverly and Salem. As soon as he descended, Webster flew toward Salem and then returned by a long volplane that carried him well over Marblehead harbor.

Tuesday was made memorable as the day on which a woman made the first flight in Massachusetts as a passenger in a hydroaeroplane, when Webster carried Mrs. Frank Gair Macomber, Jr., of Boston, for a 15-minute flight about the harbor. Phillips W. Page, who had come over from Nassau boulevard to try out the new machine, made a clever flight, and was highly enthusiastic upon his return.

The Burgess company and Curtis is so well pleased with the success of the single-step hydroplanes that it is announced that six more of the biplanes will be fitted with the hydroplanes as soon as possible. The company is also mounting a Hendee rotary motor in one of the regulation machines in a manner similar to the mounting of T. O. M. Sopwith's Gnome in the Burgess he used at the Nassau Boulevard Meet.

TRANSATLANTIC DIRIGIBLE TESTED

Atlantic City, N. J., November 4.—The monster Vaniman dirigible, built last summer in the shops of the Goodyear Tire company, was pronounced successful after a long test flight here today. The aerostat was only partly inflated, but Melvin Vaniman, who piloted the huge craft on the run, was able to give astonishing evidences of control and speed. The ship was unable to return to its shed under power, however, because of a sudden cold snap, which chilled the gas and caused it to contract while the dirigible was landed several miles from this city. It was brought back to the shed at eight o'clock this evening by federal life guards.

This was the first time the ship had been tested in actual flight and the attempt was so successful that Vaniman said afterward, he felt no hesitation in announcing the vessel to be entirely successful and ready for a long voyage through the air. The trials were made without the new trailing stabilizer, nicknamed the "what-is-it?" which is to take the place of the equilibrator used last year on the Wellman dirigible.

The craft is equipped with a new form of steering propellers, which seemed to give Vaniman better control of the craft than has ever been exhibited in a dirigible before. He made sharp turns, and performed evolutions, it is said, which might properly be classified with those of an aeroplane. At one time the dirigible was racing with an express train, and succeeded in distancing it after a dash of a little more than a mile. For a finishing touch Vaniman drove the ship along Atlantic avenue, the principal street of this city, not 200 feet above the housetops.

Then when he had fully succeeded in arousing the whole population, and bringing it out on the streets to watch and cheer, he suddenly guided the balloon toward the marshy district behind the city, in the direction of Pleasantville. An anxious three hours followed with no sign of the airship. Finally word came that Vaniman had landed on a mud flat near Pleasantville, and had been unable to rise, owing to a sudden chill, which came over the atmosphere and contracted the gas in the already partly deflated aerostat.

The crew on the test was composed of the following officers: Melvin Vaniman, pilot; Louis Loul, chief engineer; Jack Irwin, wireless operator, and Louis Blotcher, mechanic. Carlton Vaniman, a brother of Melvin, and Frank Sieberling, Jr., son of the financial backer of the expedition, went along as passengers and general assistants. Irwin sent the first message from the craft just as soon as Vaniman took it out over the waves, shortly after the ascension began.

Dropping his ground wire to the water, Irwin sent the following message:

"It is cold, but things are going great."

THREE AVIATORS TOUR ST. LOUIS GOLF CLUBS

♦ ♦ ♦

St. Louis, November 5.—Hundreds of country club members at Glen Echo Golf club and Bellerive Country club yesterday were given a foretaste of the future of aviation when A. B. Lambert, George W. Beatty and Max Lillie, each driving a Model B Wright, flew 4½ miles from Kinloch for luncheon and stopped at Bellerive on the way back to the flying field.

Lambert, who is a member of both clubs and president of the Aero Club of St. Louis, invited Beatty and Lillie to Glen Echo for luncheon and they accepted his invitation to make the trip by aeroplane. Each aviator made the trip for the pleasure of it, and although a 20 to 25-mile wind was encountered in and above the 1,000-foot level, they thoroughly enjoyed the two hours.

Half of the way to Glen Echo there was good landing country beneath the fliers all of the time, but the other part of the trip was over houses, trees and ravines. None of the aviators flew at much less than 1,000 feet altitude, Beatty choosing the 2,000-foot level.

The wind was so strong against them on the way to the first landing place that eleven and a half minutes was required by the fliers for the run. On the way back, the flight to Bellerive was made in one and one-half minutes, and from that point to Kinloch in three and one-half minutes.

The landing place at Glen Echo was the fair green and the putting green by the eighteenth hole on the golf course, the latter being at the front door of the club house. The space

after the aviators strolled out to their machines.

"Let's go over to Bellerive," invited Lambert.

"Oh, very well," accepted Lillie and Beatty.

Without any preliminaries Beatty took his seat and flew south, making a big circle over the grounds and then heading for Bellerive. The others followed.

Immediately there was a rush for automobiles. On the way to a car a chauffeur exclaimed, "They won't beat me over there!" But before the six automobiles that rushed at top speed to the near-by club were within the grounds, all three aviators had landed and were thinking about starting back to Kinloch.

Lillie's machine yesterday was fitted with a Slakon automobile horn which made a loud screeching noise as the aeroplane approached.

One of those who watched the flights was C. A. Tilles, who

LILLIE'S AND BEATTY'S WRIGHTS AT GLEN ECHO

was at one time an owner of fast race horses. He motored to Kinloch and took a five-minute spin with Beatty, which he enjoyed so much he may buy an aeroplane for his personal use.

KINLOCH NOTES

On Wednesday, November 1, the wind blew across the open spaces around Kinloch field at the rate of about 35 miles an hour, and there was only one flight made, although Lambert and Lillie were on the ground looking for a chance to fly. Beatty made one short flight, which was spectacular in the extreme.

He was allotted hangar No. 3, and to save wheeling the machine to the new location he decided to fly there by a roundabout course. He started with the wind and turned into it. As he did so the big biplane was carried upward for 200 feet with a rush, but it did not go forward perceptibly. To advance against the wind and to keep from being dashed to the ground, Beatty was forced to plunge the craft up and down. At the same time the wind was twisting it from side to side.

After a good deal of effort Beatty made the turn around the hangars and landed at the door of No. 3, but he did no more flying that afternoon.

Arrangements have been made at Kinloch for the erection of a house near the hangars, which will be heated day and night and will be occupied by a watchman.

The Benoist Aircraft company, St. Louis' only aeroplane factory, the plant of which was razed by a \$20,000 fire recently, may accept an offer to locate in another city, according to statements made Wednesday.

Tom Benoist, the aviator, who heads the concern, formerly

Continued on page 122

Left to Right—A. B. LAMBERT, G. W. BEATTY, MAXSON LILLIE

is about 150 feet wide by 600 feet long. Trees inclose the space on either side. The landing place at Bellevue, back of the club house, is narrower and a little longer with plenty of trees and ravines in the neighborhood.

Despite the hazards and difficulties of the trip, there was not even a wire broken on any of the three biplanes from start to finish. Lambert and Lillie were making their first cross-country trips, both having made their first solo flights quite recently. To Beatty the flight was nothing, of course, and the erstwhile novices showed themselves to be able pilots.

Two golfers were about to drive off the first tee when Lambert's machine appeared. Immediately caddies quit hunting for golf balls and tried to count the aeroplanes.

"Three of 'em!" exclaimed one youngster, and all the rest deserted the players and ran for the green at the eighteenth hole, near which Lambert brought his machine to a standstill.

Lambert's plane was quickly moved aside, and Lillie circled down to the green. Lillie's machine was whisked aside, and then some 200 persons, mostly caddies, watched Beatty make a wide circle to come down gradually.

After the excitement subsided Beatty, Lillie, E. Percy Noel and Frank Albert were Lambert's guests at luncheon. Soon

A. C. A. HAS PROSPEROUS YEAR

The Aero Club of America proposes to hold a great aeronautic show in the near future, fashioned after the Paris salons. It has already entered into negotiations in the matter and it is expected to be one of the chief events of a long program, which, it is expected, will make this the most important year of the club's existence. The show, together with the great meet which it is planned to hold at the time of the Gordon Bennett race, will bring a large number of foreign aviators to this country and it will probably give flying a wonderful impetus.

The club year, which closed October 31, was in many respects the most successful and prosperous the Aero Club of America has ever known. During its course the membership has been increased from 390 to 540, a growth of nearly 40 per cent. Its affiliated clubs now number 24 and all have shown a greater activity and a more earnest support of the club and all it stands for in aeronautics than in any previous year.

The number of pilots' certificates has been more than doubled, the present number being 74, as against 26 on October 31, 1910, and in addition a new system of allowing pilots to make trials for their licenses in any part of the country before special delegates of the club, has been put into operation, so that now fliers are winning their brevets at the rate of one or two a week. Incidentally, the qualifications for a pilot's license, adopted by the club, have been taken up as the standard of qualification for pilots in the United States army.

Against great odds the club won the Gordon Bennett trophy and the challenge has left the quarters of the Royal Aero Club of the United Kingdom to take a place in the beautifully decorated trophy room of the Aero Club of America. The club has actually won, to date, five out of the nine great aeronautic cup races which have been held. This makes a great showing, especially when it is considered that there are 15 other national clubs in the Federation Aeronautique Internationale eligible to compete.

In the new club house ample provision has been made for the arm-chair members of the club, for already its cuisine and service is said to be better than that in any other club in New York, while the luxurious lounging and living rooms are a great inducement to the members to gather there. The attendance at the club house, it is reported, is increasing daily.

THE NATIONAL COUNCIL DISSOLVES

New York, N. Y., November 4.—The National Council of the Aero Club of America, which had been in a moribund condition for a long time, finally has gone out of existence. Formed at a time when aeronautic clubs throughout the country questioned the federative powers of the Aero Club of America, the council had a short and stormy career. Preferring to deal directly with the national body, the affiliated clubs found the council unnecessary. The archives of the council will be transferred to the premises of the A. C. A. in New York, to become part of its records.

CORNELL ORGANIZES GLIDING CLASS

New York, N. Y., November 4.—At a meeting of entrants in the Cornell Aero club's glider course last week, 45 men registered for work. Three sections will be organized. Until December 1 all the sections will be engaged in building a "teacher" machine, after which plans will be submitted and each section will begin constructing a glider with which to fly in the spring.

COLLIER PRESENTS SPEED TROPHY

New York, N. Y., November 4.—Robert J. Collier, president-elect of the Aero Club of America, has presented the club with a trophy to be awarded to the American champion chosen in the elimination contests to defend the Coupe Internationale d'Aviation. The trophy, which is more than two feet in height, is a group representing the triumph of aviation.

RUNAWAY PLANE PLAYS HAVOC AT NASSAU

Nassau Boulevard Aerodome, L. I., November 4.—Aviator Schneider was in a remarkable accident on Friday at Nassau, when his mechanics let go of his machine too soon, and, Schneider, being unprepared for the sudden start, collided with Dr. Northwood's big needleless biplane, which was on the ground, carrying away half of the planes. The "side-swipe" threw Schneider off his course and he crashed into T. O. M. Sopwith's hangar, the front elevator piercing the big doors. When the machine came to a standstill Schneider could have touched the doors with his hands. He was unhurt.

There has not been a great deal of flying here the past week. A. L. Welsh, the Wright instructor, has been the busiest aviator. Monday was the best day of the week. In the morning Welsh took H. M. Horton, the aeroplane-wireless expert, up for a short cross-country jaunt. In the afternoon Welsh had out his three pupils, Gray, Freeman and Norton. Schneider also took out his biplane. Tuesday was a very windy day and nobody ventured up. Welsh and his pupils were the only ones out on Wednesday. It blew half a gale on Thursday and the hangar doors were kept shut all day.

On Saturday Welsh took Mrs. Irving Twombly over to call on a friend at Bellerose, four miles away.

The Queen Aeroplane company has bought Anderson's Nieuport.

Jas. V. Martin is installing a Kirkham motor in his Farman biplane.

T. O. M. Sopwith and Grahame-White, who are now in England, and who, it is said, have entered into a partnership so far as exhibition flying goes in this country, will return to the States soon and go down to Savannah, Ga., to take part in an aviation meet which will precede the big automobile races for the Vanderbilt cup and the Grand Prix. Sopwith's Burgess-Wright is being fitted with hydroplanes.

Over at the Mineola field, Capt. Baldwin has been experimenting with a shortened tail on his biplane. The feature of the week has been the flying of Bowen's tailless biplane. The steering in the machine is done by jibs or rudders placed between the planes at the ends. The fact that the machine can be controlled has been the marvel of the other aviators on the field.

ATHERTON, GLIDING, HAS FALL

Randolph, Mass.—While making a flight in a glider of his own construction in an attempt to emulate the Wrights in their recent soaring experiments, W. Stanley Atherton, of this town, fell from a height of 25 feet today, escaping unhurt. The glider was badly damaged. Atherton was one of Claude Grahame-White's mechanics at the Harvard-Boston Aero Meet.

AERO SHOW PLANNED FOR NEW YORK

New York, November 4.—The Aero Club of America thinks the time ripe to give the public an opportunity to judge of the recent progress made in aviation by getting together, under one roof, all the latest products relating to the new industry. The matter was definitely decided upon at a full meeting of the board of governors of the A. C. A. last week. The show will be held next May at the new Grand Central Palace. Preliminary arrangements already have been made with the International Exposition company, which will finance the exposition and run the business end of it.

By special act of congress the foreign machines shown will be allowed to enter free of duty, and it is hoped this will lead to a strong foreign representation, although, of course, the club is counting on domestic manufacturers to provide the bulk of the exhibits.

Dawson Crawford, of Valdez, Alaska, has commenced work on a quadriplane of original design. Owing to the severity of the Alaskan winters he does not expect to try it before spring.

M. LEYAT SHOWS UTILITY OF TOWED FLIGHT

Translated from L'Aerophile by Marc Seguin.

We want to call on this subject the attention of all who are interested in aviation, its progress, its future. It is a way of flying an aeroplane without motor, a way extremely fruitful in order either to study the stability in general or the organs or parts liable to be improved or to get practical experience in flying, as well as an acquaintance with airholes, eddies, contrary currents, etc., and last, but not least, this kind of flights constitute a real and new sport, maybe the most attractive of all.

These towed flights are made with an aeroplane without motor, equipped with all the other organs of an ordinary aeroplane, the construction, dimensions and characteristics of which will, of course, vary according to the purpose of the experiments. One end of a metallic cable is attached to the center of gravity of the machine, while the other is fastened to a fixed motored windlass or a powerful automobile. As the attachment is made only at one point, the equilibrium of the machine is not automatic as in a kite, but must be obtained by the work of the pilot.

We were led to devise this method by our desire to study experimentally, the stability of our aeroplane and the way it would comport itself while in the wind as well as to study the best way to obtain this stability. This study started in 1906, made us go through practically all ways of experimenting within the scope of our requirements—cheapness, rapidity and safety. Towed flights, such as we will describe here, gave us the best results.

We will consider first the use of towed flight as means of studying stability. For this, it will be well to experiment with a great number of apparatus of different types. Small and light aeroplanes will be built. They will have to sustain the weight of the pilot alone, and their construction will be easy, cheap and simple, as they will not need the care, the finish of motor-equipped aeroplanes. They are to the complete machine what a sketch is to a finished drawing.

If the experimenters have at their disposal a large field and a powerful automobile, this may be attached to the aeroplane by cable some 400 feet long. By means of a slip-pin the pilot will be able to unfasten the aeroplane quickly in case of accident and to come to the ground in volplane. If the field is not large enough, or not in a condition to permit the automobile to go at sufficient speed; or if the latter is not powerful enough; another very simple way of experimenting may be used. The automobile can be placed at one end of the field, its rear end raised and some kind of a simple windlass bolted on a wheel may be operated by the automobile itself.

By using this latter process we were able to fly at a speed of 28 kilometers an hour, our power of traction being only $3\frac{1}{2}$ -horsepower. With a four-cylinder, 12-horsepower automobile, equipped with a windlass, we made full flights of one kilometer. It is important to place the cable so that the start can be made against the wind, but the wind need not have a constant direction during the whole flight. We used this last process for our towed flights of 1909. Without any danger, we reached an altitude of 140 to 160 feet in a glider we were trying for the first time. This glider weighed 36 kilograms and had a lifting surface of 20 square meters.

Special models for the study of stability can be built in three or four days and tried in the worst possible weather without any risk, except the one of breaking the model if it is not strongly enough built to withstand the gusts of wind or eddies that the pilot wants to experiment with.

The model we experimented with from the beginning was already pretty well perfect from the standpoint of stability. It had not only the characteristics of the most improved apparatus of today, but also qualities of stability not possessed by these. This will explain how we quickly got results by this method without any serious mishaps, while many other experimenters who had already used either towed flights or kites failed, notwithstanding big expenditures and costly material.

For our flight the aeroplane was made to start from a

single-wheeled little car which was to be left behind. The aeroplane left the car well enough, but its rear part caught the car and was entirely wrecked. The longitudinal equilibrium of the machine was obtained by the alleron used for lateral stability. We were delighted to have an apparatus flying so well without a real elevator, but we henceforth left the single-wheeled car alone and used instead a monorail on which ran a double-wheeled car, one wheel behind the other.

This worked very well, although we had many other mishaps, due mostly to our inexperience. One time, the cable would leave a pulley and become wedged; another time we would go up too fast and kill our engine. The cable broke often. Every time our flight would end by a forced volplane at an unexpected time. One time, having been literally caught by a strong air current, which did not exist below, we went to a great height. Our mechanics got scared, the engineer stopped the engine suddenly and the apparatus came down in volplane with a great deal of speed. As the wind did not exist near the ground the apparatus was left without its initial speed, therefore without sustentation and the contact with the ground was a murderous one, for the machine, which weighing only 36 kilograms, was built of pine; but the pilot hardly got a shaking up. All these little incidents demonstrate that such experiments, even with beginners, are not at all dangerous.

When the model or pattern of an aeroplane being towed, is able to fly in the wind, the pilot can have full faith in his apparatus and go quite high without fear. However, much care must be taken in the study of the organs of stabilization of such apparatus. A towed aeroplane, conceived as the majority of the actual machines are, would be, at least as far as stability is concerned, extremely dangerous and would not permit this kind of flight. The means of stabilization used on aeroplanes might be sufficient in a calm atmosphere or in a steady wind, but a small whirl or eddy will smash the machine and often injure the pilot. People are trying to get speed and believe that having acquired speed they get stability, but stability itself or behavior of the machine in the wind is in general completely neglected and this will last as long as people are found who willingly expose themselves in dangerous apparatus. The best proof of this is that the aeroplane is still reduced to the general design conceived by our first birdmen, designs which have been basely copied or badly modified by people who believed they were improving when, safely, from the ground they were watching the flights of the so-called work.

In the towed flights it is necessary to have a particularly stable apparatus, on account of the jerks given by the tractive power, the direction of which does not always coincide with the trajections on account of the sudden shifts of the wind. These produce the same effect as eddies will in free flights. So, if a towed aeroplane works satisfactorily under such unfavorable conditions, its pilot may rest assured of success with the conform apparatus in free flights.

Towed flight will enable builders and inventors to try, without expense and danger, all contrivances they might have designed, and it is from this standpoint that we are weighing this method. The experiments being quite frequent and the apparatus being quickly built, this way of testing and verifying is much more convenient than the usual way, when motored aeroplanes are employed. The slightest change on these often requires full months of work; the machine has to be balanced and turned up again. Such experiments become impracticable, dangerous and alone all very expensive. This explains why, in aviation, progresses are so slow, notwithstanding all the sacrifices made by our manufacturers and their indefatigable efforts and courage.

Towed flight can also be used with great advantage by beginners or pilots who want to improve their mastery of the air.

It is easy for three or four young men, having at their disposal a little automobile (eight-horsepower is sufficient) or a

(Continued on page 126)

E. PERCY NOEL, Founder-Editor

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The Editor is pleased to consider MS and photographs for publication, but only material that is likely to prove of interest to the readers of Aero. The Editor cannot undertake to answer technical inquiries except in the columns of Aero.

FLYING IN WINTER

There is always a right and a wrong way to do anything, and the wrong way is apt to be disagreeable. Aeroplaning in winter is very unpleasant, if it is not done the right way, while there is a way which makes it more exhilarating and pleasurable than aeroplaning in summer, and that is saying a great deal.

We hope that this will become generally known, for it should mean continuous progress, beginning this year, even at flying fields where the winters are severe. A trial under the proper conditions will convince even the biased.

The way to do it is first of all to dress very warmly from head to foot, and then to close all the usual openings where strong, cold wind can penetrate. These points are chiefly—the ankles, the wrists, the neck. Close these apertures tightly, if you would be comfortable.

Some aviators—Americans only—have a way of belittling this bundling-up process. Some think it is a sign that a man is flier only as far as his clothes are concerned, when he dresses as he should for wintry air. This attitude will soon be forgotten, even by the men who are pleased to adopt it, and the aviator, or the passenger, who would use an aeroplane in winter should think of his comfort, and not of the opinions of others. The man who dresses for the air is a much more sensible fellow than the man who smiles at him.

At the first, the cold air may bring water to the eyes, and it may lash the exposed part of the face, but the former can be outgrown by practice, and the later is easily forgotten. There is a rapturous exhilaration about the thing that makes life very much worth while. The air is forced into the nostrils, passes to the lungs, and the hot blood tingles throughout the system as soon as one lands, if not before.

Last year there was little flying in cold climates. This year, the aviator who knows the joy of winter aeroplaning is looking forward to the novelty of flying over the snow.

No, aviation this winter will not be confined to the fair land of California, and the semi-tropical countries. There will be plenty of aviators, pupils and passengers braving the north wind and enjoying the experience.

But dress for it.

Conditions of the race for the Coupe Internationale d'Aviation in 1912, occupied the attention of the executive committee of the Aero Club of America last week. The matter will come up for decision at the next meeting of the Federation Aeronautique Internationale, in Rome, next month, at which E. W. Mix, Hart O. Berg, W. S. Hogan, Robert Graves and D. Redmond Cross will represent America.

Without reaching any definite conclusions last week, the committee agreed that the race should be only a closed circuit of not less than 100 kilometers nor more than 200 kilometers. At Rome the Americans will propose that each machine in the race and all its component parts shall be manufactured in the country it represents. Other proposed instructions to the American delegates include advocacy of the institution of a special record for altitude, above sea level, regardless of the altitude above the ground; opposition to holding the 1912 conference in June, but favoring Vienna as the place; urging international adoption of the American rule of limiting the age of passengers at 18 years and their weight at 125 pounds for passenger-carrying records.

Activity of Aviator and Builder

THE DIARY OF FLIGHT

WEDNESDAY, OCTOBER 25.

Nassau Boulevard, L. I.—Ladis Lewkowicz flew for nearly three hours trying out a new Queen monoplane. He only descended when his tank was emptied of gasoline. His new machine worked perfectly and he covered all the surrounding section of Long Island on his flight going to Hicksville and Jamaica on different occasions.

THURSDAY, OCTOBER 26.

Norfolk, Va.—Lincoln Beachey and Eugene Godet flew. Lieutenant T. G. Ellyson and J. H. Towers flew also.
Paris, Ill.—John D. Cooper flew.

FRIDAY, OCTOBER 27.

Charlotte, N. C.—J. C. Wilmer made a remarkable flight in a driving rain.
Norfolk, Va.—Lincoln Beachey and Eugene Godet flew.
Paris, Ill.—John D. Cooper flew.

SATURDAY, OCTOBER 28.

Norfolk, Va.—Lincoln Beachey and Eugene Godet flew.
Paris, Ill.—John D. Cooper flew.
Redlands, Cal.—Frank Champion made a flight from this place to San Bernardino and return. He carried a message from Mayor Strait of Redlands to Mayor Bright of San Bernardino, which he dropped while circling above that place. He was in the air 20 minutes. His machine had just been repaired from a smash up of October 27. Beryl Williams also made exhibition flights, ending one of them with a collision with a pile of sand which wrecked the biplane but did not injure Williams.

SUNDAY, OCTOBER 29.

Greeley, Colo.—George Thompson flew in a Mathewson biplane.
Paris, Ill.—John D. Cooper flew.
Cheshire, Conn.—C. O. Hadley flew. His biplane was wrecked by a collision with a tree on landing.
Marblehead, Mass.—W. Starling Burgess and Clifford L. Webster made several successful flights in the Burgess hydroaeroplane.

MONDAY, OCTOBER 30.

Los Angeles, Cal.—At Hyde park field W. S. Eaton flew. D. C. Herstine, an Eaton pupil, circled the field. D. C. De Hart also flew, starting from Hyde park for a cross country flight which ended safely in a field several miles distant.

TUESDAY, OCTOBER 31.

Los Angeles, Cal.—D. C. De Hart flew from Hyde Park field, taking the air at 11:30 and circling over the city until 12:10. He covered approximately 30 miles setting a record for amateurs in this section.

Marblehead, Mass.—Clifford L. Webster and Phillips W. Page flew in the Burgess hydroaeroplane. Webster carried a lady passenger.

Newport News, Va.—Lieutenants T. G. Ellyson and J. H. Towers started on their return flight from Old Point Comfort to Annapolis today and were compelled to land at Crab Neck near the mouth of York river.

WEDNESDAY, NOVEMBER 1.

Kinloch, Mo.—G. W. Beatty, Maxson Lillie and H. F. Kearney flew. Beatty and Lillie made a flight across country nine miles to the Stanislaus seminary, a Catholic institution near Florissant and both came to earth there, afterwards flying back to the field.

THURSDAY, NOVEMBER 2.

Wapello, Iowa.—J. C. (Bud) Mars, flying for the International Aeroplane Manufacturing Company of Chicago, gave two splendid flights during the afternoon greatly pleasing all concerned.

Hopkinsville, Ky.—James K. Ward flew.

Newport News, Va.—Lieutenants T. G. Ellyson and J. H. Towers started on their way to Annapolis again but were forced to stop at Gloucester point.

MONDAY, NOVEMBER 6.

Kinloch, Mo.—Antony Jannus flew.

LADIS LEWKOWICZ IN MONOPLANE

The Queen Aeroplane company of New York is opening a school of aviation at Los Angeles for the winter season. Ladis Lewkowicz will be chief instructor and it is said that this will be the first monoplane school to operate in California. Lewkowicz is a licensed French pilot and it is said he will run the school entirely on French lines. Three carloads of Queen monoplanes and spare parts are ready to be shipped at a moment's notice to Los Angeles. All the machines will be equipped with Gnome and Anzani motors. Ignace Semenuk, a licensed pilot of the Aero Club of France, will assist Lewkowicz.

Lieut. Hans. Giercke, winner of this year's Gordon Bennett race, traveled to Kansas City, arriving there October 30, in response to a challenge from H. E. Honeywell and John Berry, both of St. Louis, for a challenge race. There was a large side bet in view when the challenge was made and everything looked promising for a well-contested race, but when Giercke arrived in Kansas City he found that through some misunderstanding neither of the challengers was ready. He was greatly disappointed and ordered his balloon to be shipped back to New York immediately and was preparing to follow it, when George M. Meyers of the Aero Club of Kansas City prevailed on him to take a few members of the club on a short trip in the balloon Kansas City II, on October 31.

An Oklahoma City newspaper made the announcement that on November 3, there would be an aeroplane flight at Alva, Okla., together with an exhibition given by a band of Indians. It is indeed strange when a western town can regard Indians with the same curiosity as an aeroplane.

Philip Bangs of Savannah, Ga., has built a scale model of the Bleriot, which is said to be very complete. The boy is studying to be an electrical engineer and has for some time been actively interested in wireless telegraphy.

A. Rudolph Silverston has just completed a full size model of a monoplane, which he says is different from any other ever made and is destined to revolutionize aeronautics.

Aero Club of Saint Louis

Temporary Office: 19 South Broadway, St. Louis.

E. Percy Noel, Secretary.

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BULLETIN

To the Members of the Club:

An impression has been created, unintentionally, that members desiring to visit Kinloch field, except on specially advertised occasions, will be charged admission. This is erroneous. Club members should show their membership cards, and pay no admission fees for themselves or their guests, or for their automobiles.

During the past week there has been flying daily, and this will probably continue throughout the winter. It is worth while to visit the field at any time, and the oftener members avail themselves of these privileges, the better the officers of the club will be pleased.

The press stand has been moved near the hangars, and will be heated all winter, so that cold weather need not deter members from visiting Kinloch. The top of the stand affords an excellent position from which to watch the flights. It is reserved for members only.

E. PERCY NOEL, Secretary.

Continued from page 117

known as the Aeronautic Supply company, which was organized in 1909 as the first concern of the kind in America, said that while he considered St. Louis the ideal location for the plant, an attractive offer was being considered to locate east of the Mississippi.

Thursday, November 2, the thermometer was hovering around the freezing point and a swift wind wearing out the flags on the hangars, but two aviators and as many passengers were in the air at Kinloch, showing wintry weather did not stop the flying.

Beatty flew twice with passengers. Max Lillie flew about 15 minutes.

The smaller outbuildings and the press stand were drawn by horses to a point about 200 feet east of the hangars. The press stand will be equipped with a stove and window so people at the field can get warm on cold days. The stand has lockers, which will be assigned to aviators and students to store warm flying garments.

George W. Beatty has enrolled five pupils, some of whom will arrive from out of town this week. Edward Korn of Sydney, O., is progressing rapidly as a pupil, Beatty teaching him on his standard Model B. Wright. Korn will equip his Farman-type Roberts motored biplane with Wright control.

Antony Jannus, who has joined the Benoist forces, is a new arrival at Kinloch. He expects to try for his pilot's license this week in a six-cylinder Roberts motored Benoist biplane.

Amadee V. Reyburn, Jr., obtained permission from the aero club to construct a galvanized hangar for his A. A. S. H. Bleirot-type with Emerson motor. The hangar will be heated. No fires are permitted in the wooden hangars.

John D. Cooper returned Saturday from a successful engagement at Paris, Ill. Hugh Robinson, the Curtiss aviator, was in the city Sunday.

Max Lillie, with his manager, Frank Albert, left for Chicago, Sunday night. They are going to New Orleans and vicinity for the winter.

AVIATOR AND BUILDER.

Lawrence R. Miller of St. Paul, Minn., has invented a new five-bladed propeller which he says makers of flying machines will adopt from sheer necessity. He also has new patent wings for a monoplane.

C. K. Fornier and E. W. Hartman of Alameda, Cal., have leased an acre of land on the old race track in that city and are preparing to erect a factory and testing laboratory for the manufacture of aeroplanes. Hartman claims to have perfected an aerial vehicle which has perfect stability, but at present is not inclined to give out information concerning his invention.

The United States army aviators gave a unique dance in one of the hangars at College Park, Md., last week. It was the farewell hop before the soldier-fliers went south and the men in the aviation camp worked for more than a week decorating the hangars. Lieut. T. D. Milling wrote a special waltz for the occasion called the "Vol Plane Glide" while the band leader arranged a new square dance known as the "Spiral Dips."

Albert Elton is now in St. Louis. He intends to qualify for his pilot's license as soon as possible.

AVIATOR AND BUILDER

John W. Leitenberger and Anton Heindl, of Johnstown, Pa., are the owners of a Bleriot-type monoplane purchased from Francois Raiche, president of the Francaise Americaine Aeroplane company. The engine they will use was formerly tried out with the intention of flying the Russ airship, which was a failure. The monoplane is now assembled and a trial flight is expected soon.

It is reported that the government will establish an aviation school in Atlanta, Ga. This will probably be only a temporary winter camp. Other southern locations are being considered.

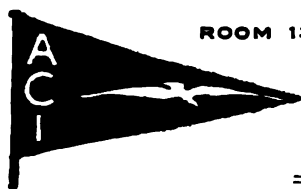
The Signal Corps of the National Guard of Colorado is about to order a Wright biplane to be used in training work near Denver. The United States Aeroplane company, also in Denver, Colo., has a biplane almost ready for work. It will be equipped with a Hall-Scott motor.

The Mathewson Aeroplane company, of Denver, Colo., which lost a plane recently in a smashup at Greeley, will have a new machine ready in a few days. The new biplane will contain improvements over the first machines produced by this company.

John D. Cooper took part in a high school class war while he was flying in Paris, Ill., during the past week. It seems that the seniors and juniors in the high school there always indulge in a spirited rivalry to see which class can carry its colors to the highest point. The seniors had already outdistanced the juniors by having one of their number climb a church steeple and leave their flag. Cooper's arrival was an opportunity that was quickly seized by the juniors, however, and he had not been in the town an hour before he was beset by members of the class who asked him to tie their colors to his machine when he made his first flight. This was done and the juniors won the class honors effectually when Cooper soared to a height of 1,400 feet with the pennant tied to his aileron.

Hugh A. Robinson will be busy for the next two months filling engagements in Kansas and New Mexico. When these dates are filled he will go to San Diego, and join the Curtiss camp for a time. Tests will be made during the winter of an automatic stability device which Robinson himself has designed and perfected.

THE AERO CLUB OF ILLINOIS



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SUNDAY, SEPTEMBER 17.

Town.		Mileage For Time. for Day. Trip.
MONDAY, OCTOBER 16.		
Left Vinita, Kans.	7:41 a. m.	
Arrived Muskogee, Okla.	9:14 a. m.	
Left Muskogee, Okla.	11:14 a. m.	
Arrived McAlester, Okla.	12:30 a. m.	125 1,908

TUESDAY, OCTOBER 17.		
Left McAlester, Okla.	7:30 a. m.	
Stops at Denison, Bonito and Gainesville.		
Arrived Fort Worth, Tex.	4:16 p. m.	191 2,099
Followed wrong tracks and lost way.		

WEDNESDAY, OCTOBER 18.		
Left Ft. Worth, Tex.	12:15 p. m.	
Arrived Dallas, Tex.	12:45 p. m.	32 2,131

THURSDAY, OCTOBER 19.		
Left Dallas, Tex.	2:20 p. m.	
Arrived Waco, Tex.	4:00 p. m.	136 2,267

FRIDAY, OCTOBER 20.		
Left Waco, Tex.	11:15 a. m.	
Gave exhibition at Granger.		
Arrived Austin.	1:55 p. m.	110 2,371
Arose from Austin to continue trip at 4:00, but landed in nearby field.		

SATURDAY, OCTOBER 21.
Compelled to stay in Kyle, Tex., by high winds.

SUNDAY, OCTOBER 22.		
Left Kyle, Tex.	11:00 a. m.	
Arrived San Marcos, Tex.	11:20 a. m.	
Left San Marcos, Tex.	11:45 a. m.	
Arrived at San Antonio, Tex.	12:40 p. m.	76 2,453

MONDAY, OCTOBER 23.
Delayed in San Antonio, Tex.

TUESDAY, OCTOBER 24.		
Left Harlandale, Tex.*	12:43 p. m.	
Stopped Lacoste, one hour, stopped 30 minutes at Sabinal and Uvalde.		
Arrived Spofford, Tex.	6:05 p. m.	132 2,585

WEDNESDAY, OCTOBER 25.		
Delayed in Spofford owing to smashup in attempting to leave.		

THURSDAY, OCTOBER 26.		
Left Spofford, Tex.	12:57 p. m.	
Arrived Del Rio, Tex.	1:42 p. m.	
Left Del Rio, Tex.	2:30 p. m.	
Stop at Dryden, Tex., at	4:20 p. m.	
Arrived Sanderson, Tex.	5:30 p. m.	170 2,755

FRIDAY, OCTOBER 27.

Held at Sanderson by high winds.
*Harlandale is near San Antonio. The aviator flew there late in the afternoon of October 22.

SATURDAY, OCTOBER 28.

Left Sanderson, Tex.	11:53 a. m.	
Stopped one hour at Alpine, Tex., because of fog.		
Arrived Sierra Blanca, Tex.	5:40 a. m.	231 2,986

SUNDAY, OCTOBER 29.

Left Sierra Blanca, Tex.	a. m.	
Arrived El Paso, Tex.	3:15 p. m.	285 3,071

MONDAY, OCTOBER 30.

Remained in El Paso for repairs.

TUESDAY, OCTOBER 31.

Left El Paso, Tex.	10:41 a. m.	
Stopped Deming, N. M.	12:30 p. m.	
Arrived Willcox, Ariz.	4:45 p. m.	222 3,293

WEDNESDAY, NOVEMBER 1.

Left Willcox, Ariz.	1:05 a. m.	
Stopped at Tucson, Ariz.	1:00 p. m.	
Arrived Maricopa, Ariz.	4:26 p. m.	173 3,466

THURSDAY, NOVEMBER 2.

Left Maricopa, Ariz.	9:45 a. m.	
Stopped at Phoenix, Ariz.	10:30 a. m.	
Arrived Stoval Siding.		225 3,691

FRIDAY, NOVEMBER 3.

Left Stoval Siding, Ariz.	8:22 a. m.	
Arrived Imperial Junction, Cal.		133 3,824

SATURDAY, NOVEMBER 4.

Left Imperial Junction, Cal.*	10:45 a. m.	
Arrived Banning, Cal.	12:55 p. m.	65 3,889

*He made his start from Salton, three miles distant from there, it being necessary to trundle the machine that far to find a smooth field.

SUNDAY, NOVEMBER 5.

Left Banning, Cal.	12:00 m.	
Arrived Pasadena, Cal.	4:10 p. m.	81 3,970*
Stopped Pomona, Cal.		

*Distances given are as crow flies, and not according to railroad mileage.

FOWLER REACHES DOUGLAS, ARIZ.

Douglas, Ariz., November 4.—Robert G. Fowler, who started on a transcontinental flight, recently, arrived here this afternoon from Benson. He was held in Tucson two days, during which time he met, and congratulated, aviator C. P. Rodgers on his splendid progress across the country. Fowler reached Tucson on October 30, and it was November 2 before he was able to leave that place. He then flew to Benson, Ariz., making the trip in two hours and 15 minutes.

NEW CORPORATIONS

The Froeberg Aeroplane company has filed articles of incorporation with the county clerk of Contra Coast county, California, declaring its intention of building and selling heavier-than-air machines designed by J. R. Froeberg, of Richmond, Cal. The directors are J. R. Froeberg, president; James H. Edelon, of Oakland, vice-president; R. J. Jones, of Richmond, treasurer; B. E. Ferress, secretary, and Frank W. Smith, attorney.

Ward Aviation and Exhibition company, Chicago, Ill.; to give aviation exhibitions. Capital \$2,500. Incorporators, Ike Bloom, Sam Giselson, Arthur H. Haggenjos.

Milwaukee School and College of Aviation, Milwaukee, Wis.; to manufacture flying machines. Capital \$50,000. Incorporators, Eleanor Silverston, Henry Feldhus, Louis Jensen, Lester A. Loewenbach and Rudolph Silverston.

AERO MART

These Notices Bring Results

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SITUATIONS VACANT.

AVIATOR—Wanted, licensed monoplane aviator. Give particulars as to instruction and experience. Box 163, Aero, St. Louis.

SITUATIONS WANTED.

ASSISTANT—Young man desires identification with parties in the exhibition field. Has general knowledge of various types of machines; will furnish \$150.00 to responsible party. Address Box 166, care Aero.

ASSISTANT—Young man, age 23, no bad habits, wants position as assistant, or in factory, with prospects of becoming aviator. Five years' experience with all kinds of gas engines; have worked with all the two-cycle aero motors and most of the four-cycles. Can do any kind of woodwork, have built two gliders and one Curtiss-type aeroplane. Box 167, care Aero, St. Louis.

ENGINEER—Graduate technical engineer with several years' experience in experimental engineering, desires technical or commercial position with manufacturer or dealer in aeronautical apparatus, involving either development work on apparatus, or the commercial handling of supplies and products. Willing to qualify as aviator. Location immaterial; south or west preferred. E. S. Burnett, Sibley Mechanical Laboratory, Ithaca, N. Y.

YOUNG MAN, 22, temperate, technical education with factory and road experience on monoplanes and biplanes, wishes employment, preferably with chance of becoming aviator; references. Moderate salary. Verdler Burwell, 161 W. Thirty-sixth St., New York.

MISCELLANEOUS WANTS.

MOEDEBECK HANDBOOK—Wanted a copy of Moedebeck's Handbook. Will pay \$2 for second-hand copy in good condition. Box 200, care Aero, St. Louis.

MOTOR WANTED—One second-hand 30-horsepower, or more, gasoline engine, must be light and price low. Address, L. Englehart, Meriden, Conn.

FOR SALE.

AEROPLANES—Curtiss-type equipped with 6-cylinder Kirkham motor. Carl Mourfield has made 20 consecutive flights, ranging from 5 to 20 minutes without a single mishap in same. Price, complete, \$2,500.00, or will sell without motor for \$1,000. Material and workmanship guaranteed equal to any on the market. Reason for selling, Mourfield wishes to quit exhibition flying. Address, Aeroplane, Box 607, Monroe, La.

AIRCRAFT SUPPLIES—Aeroplanes for sale and built to order; propellers, models and model stock; Chicago engines; flying models. Chicago Aero Works, H. S. Renton, Prop. 164 N. Wabash Ave., Chicago, Ill.

AIRCRAFT SUPPLIES—Aeroplanes for sale and built to order. Submit your designs and get our prices before going further. Propellers, wheels and fittings made to order. The Eaton Brothers Factory, 1708 Echo Park Ave., Los Angeles, Cal.

BIPLANE—32 feet, headless, with extra parts, \$200.00. John Frier, 5833 Julian, St. Louis.

BLERIOT monoplane equipped with 60-horsepower engine with or without motor. Has flown. How much money have you? Will treat you right. Box 146, care Aero, St. Louis.

CARBURETER—For sale, one Schebler 1 1/4-inch aluminum carbureter; complete and ready for attachment to aviation engine. Very slightly used. A. V. Reyburn, Jr., 5305 Delmar Boul., St. Louis, Mo.

CONSERVATIVE MEN are exacting in their requirements. Quality first considered, then price. Advise us your needs. Aero Supply company, Boston, Mass.

GLIDERS—Everybody can afford to fly. \$25 purchases our man-carrying aeroplane. A 20-foot glider completely assembled. Guaranteed. Shipped anywhere for \$25, f. o. b. Chicago. Aerocadster Construction company, 3751 Indiana Ave., Chicago, Ill., Glider Department.

GLIDER—20-foot biplane glider, with fish-shaped uprights, laminated ribs, etc. \$30. John Frier, 5833 Julian, St. Louis.

MAKE an aeroplane from your bicycle for \$6.00 Send 50 cents for blue prints with instructions. Address Hull Monoplane Co., Marshalltown, Iowa.

PHOTOGRAPHS—Enthusiasts; six perfect photographs of prominent aviators, aeroplanes, flights, etc.; interesting description, 25 cents. Aeronautical Photo Co., Revere, Mass.

PROPELLERS to 8 feet, 6 inches. \$20.00. John Frier, 5833 Julian Ave., St. Louis.

WATCH CHARMS—A tiny propeller, just what everyone interested in aviation wants for their watch fob or chain. Four laminations of spruce and mahogany, finished like the real thing. Price, silver mounted, 25 cents; gold, 35 cents. No stamps. The Model Shop, 1932 Riverdale St., Chicopee, Mass.

UP-TO-DATE PLANES AND MOTORS—Nieuport monoplane, latest type passenger-carrying machine fitted with 70-horsepower Gnome motor, holder of all American records for speed and altitude with passenger; Grahame-White Baby biplane fitted with 50-horsepower Gnome motor; Farman-type biplane fitted with 50-horsepower Gnome motor, two 50-horsepower Gnome motors. All ready for immediate delivery in New York. For prices and full particulars apply Box 50, care Aero, New York.

FINANCIAL.

CAPITAL WANTED—Desire to put 6-cylinder, 2-cycle rotary motor on market, but lack funds to do so. Motor has proven lighter, simpler and more powerful, by far, than anything on the market. Only 110 pieces, including nuts, etc. Nickel steel forgings throughout. Will make fortune if handled right. Will sell interest to right parties. Address H. C. 70, Aero.

MANAGER—Wanted, person to act as manager and take interest in aviation company. Some capital required. Address Box 159, Aero, St. Louis.

PARTNER—Wanted partner with 25 or 30-horsepower motor. Have good monoplane 25x22 feet, 7 foot cord, 180 foot lifting surface. Good chance for man with small capital. Correspondence solicited. T. Willoughby, San Leon, Tex.

PATENTS—Patents, gas engines, motor vehicle and aeronautical work a specialty. John O. Seifert, Solicitor of American and foreign patents, designs and trademarks. 500 Fifth Ave., New York City.

MODELS AND MODEL SUPPLIES.

MODEL AEROPLANES—Aerodster model aeroplanes and supplies. Quality finest, prices lowest. Stamp for catalogue. Aerodster Construction company, 3751 Indiana Ave., Chicago, Ill.

MOTOR—Our new all-aluminum cellulose turbine is ready for your model. This motor will deliver $\frac{1}{4}$ -horsepower for three minutes. Complete motor 6 ounces. Watch it take prizes, but be sure to have one on your model. \$2 post-paid. The Co-Operative Aero association, Muncie, Ind.

INSTRUCTION.

DYKE'S GASOLINE ENGINE INSTRUCTION—Tells you all about engines, ignition, magnetos, every aviator ought to know. We also have working models of engines; learn to set valves, time ignition, etc. Write today for catalogue. It's interesting in itself. Absolutely free. A. L. Dyke, Publisher. Box 20, Roe Bldg., St. Louis, Mo.

LEARN to fly in two weeks. Students operating biplanes alone the first day; flying daily, weather permitting. Competent instructors in attendance. Aeroplane construction; also care and motor knowledge free. No bond required for breakage, terms very reasonable; write for terms. Aviators and aeroplanes supplied for exhibitions. Francaise Americaine Co., Mineola, L. I., N. Y.



1,006,969, October 24, 1911.—Robert E. Miller, Pittsburgh, Pa. A flying machine comprising a frame work, a transverse plane carried thereby, auxiliary shiftable planes arranged above the ends of said transverse plane, means including a tiltable seat and cables for shifting said auxiliary planes, a superimposed plane arranged over the central portion of said transverse plane and at a point above the planes of the auxiliary planes, means including a drum for adjusting said superimposed plane, an adjustable rudder supported by the rear end of said frame work, a rear plane supported from said frame work and arranged over said rudder, means including a lever and cables for adjusting said rudder and rear frame, a front plane supported forwardly of said frame work, and means including a lever for adjusting said front plane.

1,007,225. October 31, 1911.—Paul Meissner, West Hoboken, N. J. A flying machine having a body portion, means for propelling said body portion, sustaining planes carried by the body portion and an auxiliary plane extended above and at the rear end of the body portion and separated therefrom and positioned above the propelling means.

1,007,405. October 31, 1911.—Rudolf Wagner, Stettin, and Carl von Radinger, Wellingsdorf, near Kiel, Germany. A frame structure for airships, balloons, aeroplanes and the like, comprising a number of folding sections, and detachable means for connecting said sections, end to end.

1,007,445. October 31, 1911.—William A. Hutson, Philadelphia, Pa., assignor of two-thirds to Jay H. Keeler, one-thirtieth to George W. Brenn, one-tenth to Josephy G. Goff, one-thirtieth to Jacob Gottlob, and two-thirtieths to Charles W. Shaw, Philadelphia, Pa. An elevated guide track, an aeroplane, means for propelling the same, and a vertical guide on the side of said aeroplane, normally out of contact with said track, but constructed to engage the same to limit the lateral movement of the aeroplane.

1,007,467. October 31, 1911.—William F. Mangels, New York, N. Y. An apparatus for teaching aviation, comprising a vehicle, means for propelling the vehicle, a frame mounted upon the vehicle, a power-driven flying machine, means for suspending the flying machine within the frame, and means for limiting the lengthwise and lateral movement of the flying machine.

1,007,486. October 31 1911. John Proksa Chicago Ill. A driving and steering mechanism for flying machines comprising an engine shaft, a propeller shaft, an extensible universal joint, forming an operative connection between the two shafts, an inner gimbal member carrying the propeller shaft, an outer gimbal member carrying said inner gimbal member, vertical pivot gudgeons connecting the gimbal members, a supporting frame formed with a yoke, horizontal pivot gudgeons connecting said yoke and the outer gimbal, individual means for imparting angular adjustment to the outer gimbal in one plane, and individual means for imparting angular adjustment to the inner gimbal in another plane.

BALLOON RACE DISTANCES VERIFIED

The Aero Club of America has announced the following official distances of the balloons in the Gordon Bennett race: Hans Gericke, Germany, 471 miles; Frank P. Lahm, America, 408 miles; L. Vogt, Germany, 350 miles; John Berry, America, 293 miles; W. F. Assmann, America, 275 miles; Emile Dubonnet, France, 200 miles. These figures are compiled by the U. S. Geographical bureau, and they will be used by the Federation Aeronautique Internationale in chronicling the result of the race.

OFFICERS FLY DUAL CONTROL CURTISS

Fort Monroe, Va., October 25.—Lieut. T. G. Ellyson and J. H. Towers set a new military record today, flying a Curtiss hydroaeroplane provided with the dual control supplied by Curtiss for his military planes. They covered a distance of 140 miles without a stop, traveling for two hours and 20 minutes in the face of a chilling wind. It is said that the flight would have been impossible had the aviators been unable to take turns in flying the machine.

The start was made at Annapolis and the landing was made at Buckroe Beach, Va., just three miles from Fortress Monroe. The route was down Chesapeake Bay. The Curtiss company considers the flight one of the greatest demonstrations of the efficiency of the hydroaeroplane, not to speak of the ability of the aviators, that has ever been carried out. The officers intend to continue their flight up the Potomac river to Washington, where they will probably make flights for the benefit of the secretary of the navy and other officials who have never seen this machine in operation.

RUSSELL JOINS BURGESS-CURTIS

Dayton, Ohio, October 28.—F. H. Russell, who for the past year has been general manager of the Wright company, has resigned his position to accept one of a similar nature with the Burgess company and Curtiss. Russell has been with the Wright brothers since they first entered into the exhibition business and the manufacture of planes, and during this time he has become very well known to all those interested in aviation.

Russell believes strongly in the future of the hydroaeroplane as a means of introducing the aeroplane as a sport and form of recreation, and his new connection with Burgess company and Curtiss will give him every opportunity of rapidly developing a new field for the aeroplane. The hydroaeroplanes used by the Burgess company will be designed by W. Stirling Burgess, one of the leading boat designers of America, who is especially well fitted to design an efficient, strong, light weight hydro for attachment to the Burgess planes.

Continued from page 119

small motor, to get together. They can easily get a windlass, and by themselves they will be able to master aviation, to become pilots without fear of breakages or personal injuries, without aerodrome or hangar expenses. A recently-cut field or a meadow some 600 feet by 120 will be sufficient. They can find this almost anywhere and it will be for them the ideal aerodrome. They will be able in eight days to achieve big results, as they can make 20 flights an hour and each one of them will combine a start, a horizontal flight, a volplane and a landing.

In the number of L'Aero of February 12, 1911, under the heading "Learning How to Fly With the Glider," Alexandre Dumas writes:

"A few days ago, were referring to the splendid performance of Leyat, getting his pilot's certificate at Sommer's school, Mourmelon, at his first attempt. This appearing incredible to us, we asked Leyat for a few explanations. He answered that his success was due to his long and many trials and experiments, all made with gliders towed by windlass.

"Let us state now that the school of gliding, too much neglected in general, makes real aviators. It gives them a real acquaintance and mastery of the air; too often aviators, when trained by the mechanical flight, succeed only at being unskillful chauffeurs, unable to navigate the slightest eddy, if by misfortune the motor stopped suddenly."

The glider, or better, the towed aeroplane, is a real sport which will strongly appeal to and quickly enthuse all lovers of simple sports, such as athletic games, skating, riding; as well as the lovers of the yacht and the automobile. It is not dangerous, it is easy to organize in all countries, in winter or summer, on the ground, water, or ice. It is a sport within the means of all, for the boys or girls of all ages.

These beautiful glides through space can easily attain 1,000 meters in length, at a height from three to 160 feet. At a speed of 25 kilometers per hour, they are without danger. We are not killed whenever we roll on the ground in a football game or fall from a bicycle.

Moreover, the towed aeroplane is equipped with wheels and a landing apparatus which cannot fail at the speed above mentioned. The steering is much easier than the one of a bicycle and a child five years old can fly after a one-hour lesson.

We are not talking about an automatic glider of the Chanute, Lilienthal or Pilcher type, nor about towed gliders such as have been used in France. We always said, and purposely, "aeroplane without motor" or "towed aeroplane." Such an apparatus is equipped with a rudder, a stabilizer, ailerons and its driving has all the charms of the motored aeroplane. It is an amusement both sportive and scientific.

We can very well imagine a crowd of college boys, taking place in turns in their aero, making a full flight for a given distance, each one trying to become a champion of volplane by landing further than his comrades. We can also see the eldest of the family very proud to take up with him, in his two-seater, his brothers and sisters. These will certainly prefer these fine aerial "slides" to the "chute-the-chute," "scenic railways," or "pony rides," all amusements really more dangerous.

But the interest we see in the propagation of this new and ideal sport is not to amuse school boys on their vacation. We think it is the best way to turn aviation towards what it is bound to become soon. The history of one of the finest sportive inventions is there to convince us.

Was the old velocipede, the ancestor of the modern bicycle and motorcycle, of any practical utility? It was an amusement, maybe a sport, but an acrobatic and dangerous one. Its most fervent adepts were little dreaming of the future in store for their chimoy machine. To this velocipede, however, we owe a most marvelous machine, the most popular and useful sport.

For a long time we have felt confident that the aeroplane would meet with the success of the motorcycle and automobile, if not of the bicycle. Before long, the aeroplane will become more economical than the motorcycle and the automobile. We are even claiming that the great superiority of

aeroplane over the sports will be its safety, no matter how strong. This statement might appear extravagant now. With the aeroplane, no more road accidents, false moves, no more obstructions. Maybe we will not travel as fast in the air as we do on the ground, but we will travel in a straight line, with complete security.

In order to obtain this result the collaboration of everyone will be necessary to make an aeroplane popular for pleasure; but this will happen sooner than anyone believes.

It will be the means of modifying the public opinion, each day more and more frightened by the increasing dangers of aeroplaning conducted further and further on the wrong path; speed, speed alone, accomplished at a frightful sacrifice of gold and human lives, for the sake of vain glory or money.

But notwithstanding all this, we will persist in believing and repeating. aeroplaning will be before long the safest and most reliable means of fast locomotion. But, for the time being, it is not as perfected as it might appear; the aeroplane of our days cannot be compared to the old velocipede.

Let us give an illustration: the best official time for the European circuit shows that it took our aviators 45 hours to go through the 745 first kilometers, or an average speed of 16.5 kilometers an hour. The last classified aviator required 119 hours, or an average of 6.25 kilometers an hour.

Such are results obtained with our 12 very best pilots, with our best machines, helped in any possible way.

These conditions, although a little disappointing, do not deter us from having faith in the aviation of the future, and it is in order to help this, that we are today proposing this modest method within the means of all as a way of popularizing and perfecting. We believe that, by doing so, we are taking up the work of our first masters, the birdman worthy of this name, work interrupted for a time through the intoxication of a deceiving and misleading success.

In the near future, we will show how the volplane adapts itself marvelously to the scientific researches of aerodynamics, liable to help greatly the technical side of aviation, although this scientific side appears to us to be only a secondary consideration.

CORRESPONDENCE

To the Editor of AERO:

Kindly allow me to correct an account of the action of a revolving cylinder motor, with especial reference to the Gnome. I noticed your answer to Mr. James H. Spade in AERO for November 4, 1911, and beg to differ with you in your explanation of the action. The mixture of gasoline vapor and air is drawn into the crankcase and is admitted to the cylinders through the automatic inlet valves in the pistons. The mass of the valve itself is counter-balanced as far as centrifugal force is concerned, and the valve is closed by a light spring. The suction is sufficient to open the valve when the piston is moving away, relatively, from the cylinder-head, thus allowing the charge to enter the space between the piston and the head.

The connecting rods of a Gnome motor are not hollow. They cannot, therefore, conduct the mixture to the inlet valves as you stated. It is a fact that the mixture enters the crankcase through the hollow shaft, and is taken from the crankcase into the cylinders.

Hope that the above will be of some interest to readers of AERO.
SYDNEY V. JAMES, M. E.

DATES AHEAD

Wichita, Kan., November 10-11, Hugh A. Robinson.
Houston, Tex., November 14-19, Hugh A. Robinson.
Austin, Tex., November 23-24, Hugh A. Robinson.

Directory of Aviators

Fair Secretaries Use AERO When Advertising Exhibitions

I want to compliment you on AERO. It has been of considerable value to me during the last few months in arranging for our meeting.—JOHN T. STINSON, Secretary Missouri State Fair, Sedalia, Mo.

I find the Aviators' Directory of value when planning exhibitions. No person interested in aviation can afford to be without AERO.—A. G. RIGBY, Secretary Buchanan County Fair and Racing Association, Independence, Iowa.

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Jerome S. Fanciulli, Mgr. Ex. Dept., 1737 Broadway, N. Y.

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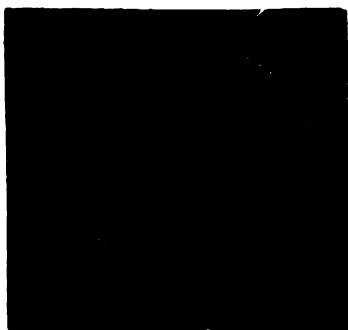
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AERO BRINGS RESULTS

VAN RENSSELAER CLUB FORMED

Troy, N. Y., November 3.—An aeronautical society has just been formed here among the students of the Van Rensselaer Polytechnic Institute, which will study the theory of aviation and conduct tests in a well equipped aerodynamical laboratory which has been allowed it by the school authorities. The members of the society have also constructed a glider, and this will be tried out in flight within a few days on a novel runway designed by students. The following officers were elected for the society's first year: T. H. Messer, president; L. J. Steinberg, vice-president; P. G. Zimmerman, secretary and treasurer. The executive committee is composed of Edward Knass and G. N. Hartwell.

The Detroit Aeroplane company has just announced a new model of their motor for 1912. In the present type there is not a nut that remains unsecured, all of the bolts being machined and locked with castle nuts. This omits the cap-screws of former years. Chrome steel is now used in the crank shafts and a steel alloy in the connecting rods. The valve timing has been changed to overlap slightly and auxiliary valves have been added to aid in the cooling, while a new lubrication system has been built in to take care of the waste in oil usually caused by auxiliary valves. The manufacturers claim 28-horsepower for the motor and a thrust of 250 to 260 pounds when it is driving one of their own propellers. The propellers are made by a machine which is said to turn them out mathematically correct at the rate of four every three and one-half minutes.

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A meeting of the Aero Club of Pennsylvania was held in Philadelphia in Room C of the Bellevue-Stratford hotel on Friday, November 3. Several informal talks were given and the topic of increasing the membership was discussed.

The Curtiss training school on North Island, near San Diego, Cal., opened for the winter season on October 20. Ward Fisher of Rochester, N. Y., is the business manager of the school this season, and Lieut. John W. McClaskey of the United States Marine Corps is in charge of the camp as its chief instructor. A number of pupils who were present on the opening day came from Hammondsport, while others, but recently enrolled, reported from all parts of the country. Curtiss pupils this season will receive instruction in flying the hydroaeroplane as well as the standard Curtiss cross-country and military biplane.

Miss Matilde Moisant, Miss Harriet Quimby, George M. Dyott and Capt. Patrick Hamilton, all of the Moisant exhibition forces, sailed Wednesday November 1, on the Mallory liner Lampases for Galveston en route to Mexico City, to fly during the ceremonies incident to the inauguration of president-elect Francesco I. Madero, Jr. Andre Houpert, who will join them in Mexico City, left the same evening by rail in charge of two carloads of Moisant monoplanes and biplanes.

BLERIOT MONOPLANES

others, all using duplicates of the

1911 CROSS-COUNTRY TYPE BLERIOT MONOPLANE

This machine is an exact duplicate of Earle L. Orington's machine, and is the first machine of the latest type to be built in the U. S.
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Waterbury, Conn., Oct. 28, 1911

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Flew Cramer and Mahon machine today. Nothing but hill. Flew from very low valley to top of hills. If the Wallop had not been there, could not have made it. Machine flew perfectly and climbed well. Will fly tomorrow for the aviation fair of Connecticut.

HADLEY

Waterbury, Conn., Oct. 28, 1911

**The ROBERTS MOTOR COMPANY
Sandusky, Ohio**

Hadley gave us a beautiful flight today. Expect some nice flying tomorrow. Had her off the ground 3 times in less than 100 feet, using the 7 diameter by six foot pitch propeller. Motor runs great. Hadley pronounces machine perfect.

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Department A.

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Edited by E. PERCY NOEL

ENGINEER CLAIMS ABILITY TO SUPPRESS GRAVITY

New York, November 11.—The bogey of unstable equilibrium is now being attacked in a new way. Parachutes, gyroscopes and other life-savers for aviators will be put in the discard if the claims of Edward S. Farrow, a New York engineer, for his invention are borne out by future tests. Farrow says he has discovered a mechanical means to suppress gravitation. This is revolutionary—even sensational—to be compared with the formation of the law of gravity itself. Farrow believes he has solved the most perplexing problem connected with aerial navigation—the suspension in air of an aeroplane after its engine, through accident or other cause, has ceased to work.

At a demonstration before a body of scientists and others, in his New York laboratory, Farrow suspended a book from a pair of scales and weighed it. The volume tipped the scales at 18 ounces. To the book he then attached a mechanical device in the shape of a small rectangular box, which he calls a "condensing dynamo," and applied power from a neighboring electric switch. As the current set the wheels in the dynamo whirling, the indicator of the scales slowly receded until it stood at 15 ounces. Apparently the book had lost three ounces of weight. In other words, one-sixth of the power of gravitation between the book and the earth had been overcome. A law of nature had, to all appearances, been nullified.

That the claims of Farrow are being given the most serious consideration is evidenced by the fact that the United States government engineers are now conducting a series of experiments to determine the value of the invention to the army and navy aeroplanes and balloons. Farrow and his associate, Gen. George O. Eaton, have filed their claims for a patent for their "condensing dynamo," but the mechanical details of the contrivance will not be announced until the government experts have completed their experiments. It may be stated, however, that the idea behind the device is based on the intensification of Hertzian waves, which are used in wireless telegraphy. It has been learned that by doing this, a parallel and corresponding intensification occurs with the vertical force which controls gravitation. This buoyancy is added to an object held to earth or propelled toward it by gravity.

Hertz demonstrated that a very rapid oscillating discharge of electricity produces a disturbance in the surrounding ether, which takes the form of electric waves penetrating space with the velocity of light. Farrow's investigations were based on a fundamental idea of creation expressed in a well-known algebraic equation. The formula means that action and reaction are equal, simultaneous and contrarily opposed.

He found that mechanical devices for controlling electricity also apply to gravity, regulating or intensifying the force of this attraction of foreign objects to the earth. By intensifying the motion of the electrical waves through suppositious ether, there will develop components in all directions. If this force or motion acts vertically it will, by the law of reaction, diminish a force such as gravity acting downward toward the earth. For want of a better name, Farrow calls this force, when acting upward, a "vertical component."

Farrow discovered that an intensification of the Hertzian waves caused a corresponding intensification of the "vertical component." Supposing that a Hertzian wave has a force of, say, 10,000, and that this is increased to 20,000 more, the force of the "vertical component" would be correspondingly increased.

And if this "vertical component" resisted the force of gravitation, then the latter would be partly or wholly neutralized or suppressed. The "condensing dynamo" invented by Farrow increases the force of the Hertzian wave, and this increased power is transmitted to the "vertical component." The latter thus intensified, offers a proportionate resistance to gravitation, and the force of the latter is reduced, thus giving buoyancy to any object to which the condensing dynamo may be attached. An aeroplane equipped with one of these dynamos of sufficient strength may be sustained in air after its motive power has ceased to work. By turning on the current of electricity there would be produced a horizontal circular, flat sheet, so to speak, of Hertzian waves radiating outward for a mile or more on every side of the aerial craft. The effect of all this would be, in a measure, to suspend the craft by the edges of a thin magnetic plane of influence, a mile or more in horizontal circumference.

It was while a cadet at West Point, as a member of the class of 1876, that Farrow first became interested in wave motion, that complex phase of physics which enters into the explanation of many of the forces of earth and air.

WILL ATTEMPT CROSS-OCEAN FLIGHT

New York, November 11.—Dr. Paul F. Gans, the German scientist, who with Joseph Brucker, of Chicago, will attempt to fly across the Atlantic next March, is now in New York in an effort to interest American naval authorities and yachtsmen in his scheme. Dr. Gans is a wealthy scientist of Frankfurt, Germany, and is to visit President Taft and Secretary of the Navy Meyer. Dr. Gans says that he has no intention of asking for any of the Atlantic fleet to be assigned as a convoy, but will ask for instructions to be given to vessels cruising in southern waters to keep a sharp lookout for him. The airship is approaching completion in the Zeppelin sheds at Johannisthal.

WAR DEPARTMENT TO HAVE WINTER CAMP

By J. W. Mitchell.

Washington, November 11.—It has been decided by the War department to establish a winter aviation camp at Augusta, Ga. This has not been officially announced, but it is practically settled, as Capt. Chandler looked over the southern territory last week and recommended Augusta to Gen. Allen, and he passed the recommendation on to the secretary of war.

The field is said to be an excellent practice stretch, being used in the business season for a hay field. Now if they can raise a crop of treasury checks on it for flying purposes during the winter, it ought to prove a fairly remunerative piece of ground.

There is no telling what rent the government is paying for it, as the government is haughty and refuses ever to take a thing without paying for it, but there was an immense amount of pressure brought on the War department by the southern towns to have the government aviators as a winter attraction, and half a dozen places would have figured it a good investment to pay for the privilege if it could have been gotten that way.

The flying field is about three miles straightaway, by half a mile broad. The climate is good, but as the local residents boast they have not had snow there for ten years, they ought to be about due for some this winter.

There was another flight of the army machines from College park to Ft. Meyer yesterday. The Wright, the Burgess-Wright and the Curtiss made the trip at an altitude of about 1,800 feet. The Wright was driven by Lieut. Arnold, carrying Lieut. Kennedy as a passenger. The Burgess-Wright was operated by Lieut. T. de Witt Milling, with Lieut. R. C. Kirtland as a passenger. Capt. Paul Beck was alone in the Curtiss. He had taken off his extra surfaces, raising the speed about five miles an hour, but decreasing his lift below the passenger point. He gave the other machines a handicap of two minutes and beat them to the fort.

The distance is 10½ miles, airline, and the fastest machine made it in a trifle less than 13 minutes, which was a fair speed, as the route followed was not absolutely direct.

The war department is going to buy another Wright for Lieut. Lahm, who is now on his way to the Philippines. He was trained on the old Wright, with the front elevators, at College park, but has since familiarized himself with the

headless machine and is expected to operate it satisfactorily. The machine will be tried on inter-island dispatch work, and doubtless will be a great moral adjunct if the army has to deal with any of the perennially restless datos.

GALES CURTAIL NEW YORK FLYING

Garden City, Long Island, N. Y., November 11.—Embryonic hurricanes have kept the Long Island aviators in their hangars most of the week. When the wind hasn't been blowing at the rate of 40 miles an hour from the north, it has been coming at 50 from some other point of the compass. It hasn't been fit to even fly a kite.

At the Nassau boulevard aerodrome there was hardly a sign of life until Thursday, when A. L. Welsh, the instructor at the Wright school, ventured out. The wind gave the aviator an exciting time, and as skillful and as daring as Welsh is, Al, when he came down, admitted that he had had "a sufficiency." He refused pointblank to give any lessons. James V. Martin, formerly of Harvard, who states that he intends to make an attack on the endurance record, has installed a 50-Gnome in his Farman. He proposes to start from the Nassau field the first day conditions are right, fly over to New York, about 18 miles away, maneuver up and down the East and Hudson rivers, and finally land on Governor's Island. Martin also has his eye on the speed record. He thinks he can get this record with his 100-horsepower "Martin-type aeroplane," which is a biplane with a tractor propeller and a monoplane fuselage.

Some of the best flying that has been seen on the Mineola field was witnessed on Friday evening, when Lee Hammond, one of the pupils of Capt. Thomas S. Baldwin, with Joseph Kimelay, of Wilmington, Del., as a passenger, rose to an altitude of more than 3,000 feet, and disappeared for a time among the clouds. Later he performed several difficult aerial feats. Others who were flying the same evening at Mineola were Tod Shriver, the ex-Curtiss flier—who is now on his way for a tour of South America; Joseph Stevenson and George Schmidt. Henry Reichert and J. H. Warden flew for licenses.

CORNELL AERO CLUB BUSY

Ithaca, N. Y., November 11.—Cornell is setting an admirable example in the study of aviation to the other big universities. Forty-odd men have registered in the Cornell Aero Club's course in glider construction, and are now engaged in building a "teacher machine." After learning how to keep right side up on the machine, the students will be graduated to the glider. A model flying contest for prizes will be held at Cornell about December 15.

A Recent Flight of Frank Coffyn at Grosse Point, Near Detroit

ALBERT ELTON FLIES OVER ST. LOUIS

Kinloch, Mo., November 12.—A week of high winds, followed by a sudden change in temperature, makes the local outlook for flying poor. Of the past week, only three days were suitable for flying because of the wind, and today it was so cold as to put it out of the question. As C. A. Elton is about to leave the field with his machine, and Maxson Lillie has already gone, G. W. Beatty is left the only licensed pilot on the grounds. Good flying is provided, however, by Antony Jannus, who has come to St. Louis as an instructor in the Benoist School of Aviation. He was busy on all the flying days last week and he has a heavy program mapped out for the coming cold season.

The feature flight of the week was provided by Elton, when he suddenly decided, on Friday, November 10, to take a trip over the city of St. Louis. He started from Kinloch at 11:30, planning to fly east to the Mississippi river to a point a little past the Eads bridge, after which he was to cut diagonally over St. Louis to the field. He had not calculated on the

tour of the south, and when this is completed he will make his winter headquarters in New Orleans.

On Tuesday and Wednesday, Antony Jannus flew in a Benoist biplane equipped with a Roberts six. The flight of Tuesday lasted 14 minutes, and was very pretty. Jannus was compelled to alight at the end of this time because of a leaky carburetor, or he probably would have been in the air until his gasoline ran out. On Wednesday he asked the Aero Club of St. Louis officers to be present so that he could qualify for a pilot's brevet. He made three flights during the afternoon, but could not complete the tests because of trouble with a carburetor.

G. W. Beatty went out with a pupil on Wednesday, and was compelled to land about three-quarters of a mile from the field, near the Wabash railroad tracks. The wind came up toward the close of the day, and he was unable to get the machine out of the place where he had landed. He flew back on Thursday morning in a high wind. Beatty also made a flight on Tuesday. H. F. Kearney made flights on Tuesday and Friday.

WOOD GOING ABROAD FOR EXHIBITS

New York, November 10.—"The aero show which the Aero Club of America will hold next spring from May 9 to 18, is going to be something really big," were the words of G. F. Campbell Wood today. "It is intended to be a representative production, and we will urge every foreign and domestic manufacturer to place exhibits there." The Aero Club has already appointed a working committee to arrange preliminary matters and Wood himself sailed for Europe on Tuesday, November 14, to interest the foreign makers.

The committee which has been appointed is composed of W. Irving Twombly, chairman, A. Holland Forbes, E. Larue Jones, Alfred Reeves, Charles de San Marzano, Charles E. Spratt, Otis F. Wood, G. F. Campbell Wood, Roger B. Whitman and Henry A. Wise Wood. One of the first acts of the committee was to set the dates, May 9 to 18. It is intended to appoint additional representatives in every large city in the country; for the American industry is counted on to supply most of the exhibits at the show.

With a view of inducing foreigners to exhibit, special freight rates will be arranged on all the steamship lines, and a special act of congress will let the machines come in duty free. It is time, the officials say, to give the American public a chance to see what has really been done in aviation and aeronautics, and to attempt to remove, by educational means, any prejudice the average layman may feel toward the science. For this reason, in addition to the commercial exhibits, there will be a historical section, and a section devoted to photographs and pictures.

The working committee intends to hold daily meetings from now on, so that no points will be overlooked in the management of the affair. The business control of the show will be taken over by a company not yet named so that the committee's efforts will be centered on the exhibits alone.

ROBINSON NOT MUCH HURT IN WRECK

Wichita, Kan., November 10.—Hugh Robinson had a mishap here today, when his biplane met a bad air current just after it had left the field. The machine dropped 30 feet and turned over, and according to reports Robinson's left collarbone was broken. He was badly shaken up, but he recovered from the accident rapidly. The machine was completely wrecked.

ALBERT ELTON

wind, which had developed great force by noon, and when he reached the river, he had quite a struggle forcing his way down stream.

Finally the climax came at the Merchants' bridge, where the wind held him stationary for some time and then began to blow him gradually backward. He had been out more than an hour when this happened, and he saw that his gasoline was beginning to run low, so he turned and made a cut for the field. The wind blew him so far north that by the time he had come inland to a point opposite Kinloch, he was over the Stanislaus seminary, three miles north of the field. He gained speed enough to reach the field by soaring to a height of 3,500 feet, as shown in his barograph, and diving with full power on a gradual slope to the grounds. Everyone pronounced the trip a splendid exhibition of airmanship.

On Wednesday, Elton had qualified for his pilot's license, making the necessary flights in fine style. There was never any doubt of his ability to meet the tests satisfactorily, for he was a well-known exhibition flier before he came to St. Louis, and his trip from Dayton to Youngstown, O., long ago placed him on the list of capable drivers. He will leave St. Louis during the early part of next week, and start for a

AMERICAN AVIATION RECORDS IN CLOSED CIRCUIT WITHOUT STOPS

Checked to November 1, 1911, by G. F. Campbell Wood, Secretary of the Aero Club of America.

A. SPEED.

1. Time on a given distance.

(a) Aviator Alone.

Distance. (Kilom.) Miles.	Holder.	Place.	Date.	Machine.	Time.
5 3.107	A. Leblanc.....	Belmont Park, N. Y.....	Oct. 29, 1910.....	Bleriot	2'44 4-5 "
10 6.214	A. Leblanc.....	Belmont Park, N. Y.....	Oct. 29, 1910.....	Bleriot	5'30 9-10 "
20 12.427	A. Leblanc.....	Belmont Park, N. Y.....	Oct. 29, 1910.....	Bleriot	11'04 4-5 "
30 18.641	A. Leblanc.....	Belmont Park, N. Y.....	Oct. 29, 1910.....	Bleriot	16'38 3-5 "
40 24.855	A. Leblanc.....	Belmont Park, N. Y.....	Oct. 29, 1910.....	Bleriot	22'12 3-5 "
50 31.068	A. Leblanc.....	Belmont Park, N. Y.....	Oct. 29, 1910.....	Bleriot	27'48 7-10 "
100 62.137	C. Grahame-White....	Belmont Park, N. Y.....	Oct. 29, 1910.....	Bleriot	1 hr. 00'41 7-10 "
150 93.205	St. Croix Johnstone....	Mineola, N. Y.....	July 27, 1911.....	Moisant	2 hrs. 08'01 1-5 "
				(Bleriot-type)	
200 124.274	St. Croix Johnstone....	Mineola, N. Y.....	July 27, 1911.....	Moisant	2 hrs. 49'52 1-5 "
				(Bleriot-type)	
250 155.342	St. Croix Johnstone....	Mineola, N. Y.....	July 27, 1911.....	Moisant	3 hrs. 32'56 2-5 "
				(Bleriot-type)	
	(b) Aviator and One Passenger.				
10 6.124	C. Grahame-White....	Nassau Boulevard, N. Y....	Sept. 30, 1911.....	Nieuport	6'13 2-5 "
20 12.427	C. Grahame-White....	Nassau Boulevard, N. Y....	Sept. 30, 1911.....	Nieuport	12'26 3-5 "
30 18.641	C. Grahame-White....	Nassau Boulevard, N. Y....	Sept. 30, 1911.....	Nieuport	18'42 "
40 24.855	C. Grahame-White....	Nassau Boulevard, N. Y....	Sept. 30, 1911.....	Nieuport	24'49 4-5 "
50 31.068	C. Grahame-White....	Nassau Boulevard, N. Y....	Sept. 30, 1911.....	Nieuport	31'01 3-5 "

(c) Aviator and Two Passengers.

5 3.107	T. O. M. Sopwith.....	Chicago, Ill.	Aug. 15, 1911.....	Wright	6'56 2-5 "
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2. Distance in a given time.

(a) Aviator Alone.

25 15.534	A. Leblanc.....	Belmont Park, N. Y.....	Oct. 29, 1910.....	Bleriot	15'
50 31.068	A. Leblanc.....	Belmont Park, N. Y.....	Oct. 29, 1910.....	Bleriot	30'
95 59.030	A. Leblanc.....	Belmont Park, N. Y.....	Oct. 29, 1910.....	Bleriot	1 hr.
	C. Grahame-White....	Belmont Park, N. Y.....	Oct. 29, 1910.....	Bleriot	1 hr.
141.97 88.216	St. Croix Johnstone....	Mineola, N. Y.....	July 27, 1911.....	Moisant	2 hrs.
				(Bleriot-type)	
214.57 133.327	St. Croix Johnstone....	Mineola, N. Y.....	July 27, 1911.....	Moisant	3 hrs.
				(Bleriot-type)	
283.628 176.238	St. Croix Johnstone....	Mineola, N. Y.....	July 27, 1911.....	Moisant	4 hrs.
				(Bleriot-type)	

(b) Aviator and One Passenger.

24.14 15	C. Grahame-White....	Squantum, Mass.	Sept. 4, 1911.....	Nieuport	15'
48.28 30	C. Grahame-White....	Nassau Boulevard, N. Y....	Sept. 30, 1911.....	Nieuport	30'

3. Greatest speed obtained, whatever the length of the flight.

Holder.	Place.	Date.	Machine.	Kilom.	Speed per Hour.	Miles.
A. Leblanc.....	Belmont Park, N. Y....	October 29, 1910....	Bleriot	109.237		67.877
(b) Aviator and One Passenger.						
G. Grahame-White...	Squantum, Mass.	September 4, 1911..	Nieuport	101.762		63.232
(c) Aviator and Two Passengers.						
T. O. M. Sopwith...	Chicago, Ill.	August 15, 1911....	Wright	56.263		34.96

B. Greatest Distance.

Aviator Alone.

			Distance Covered.	
	Kilom.	Miles.		
St. Croix Johnstone....	Mineola, N. Y.....	July 27, 1911	Moisant (Bleriot-type).....	283.628
				176.238

C. Greatest Duration.

(a) Aviator Alone.

Howard W. Gill....	Kinloch, Mo.	October 19, 1911....	Wright	Duration of Flight.
				4 hrs. 16'35"

(b) Aviator and One Passenger.

G. W. Beatty.....	Chicago, Ill.	August 19, 1911	Wright	3 hrs. 42'22 1-5 "
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(c) Aviator and Two Passengers.

T. de W. Milling....	Nassau Boulevard, N. Y.	September 26, 1911..	Burgess-Wright	*1 hr. 54'42 3-5 "
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D. Altitude.

1. Greatest Altitude.

(a) Aviator Alone.

			Altitude Attained.	
			Metres.	Feet.
I. Beachey.....	Chicago, Ill.	August 20, 1911	Curtiss	3,548½
				11,642

(b) Aviator and One Passenger.

C. Grahame-White...Nassau Boulevard, N. Y. September 30, 1911...Nieuport1,020 3,347

2. Climbing. (Upward Vertical Speed.)

(a) Aviator Alone.

			Metres.	Altitude.	Time.
R. Simon.....	Chicago, Ill.	August 19, 1911	Bleriot	500	*3'35"
T. O. M. Sopwith...	Chicago, Ill.	August 19, 1911	Bleriot	(1,640 ft.)	The same.

(b) Aviator and One Passenger.

C. Grahame-White...Nassau Boulevard, N. Y. September 30, 1911...Nieuport 1,000 *9'
(3,280 ft.)

E. Alighting.
Aviator Alone.

T. O. M. Sopwith...Nassau Boulevard, N. Y. July 22, 1911.....Howard Wright (Farman-type)..(0.445 metre).....1 ft. 5½ in.

F. Weight-Carrying.

				Weight.
P. O. Parmelee.....	Chicago, Ill.	August 19, 1911	Wright	458 lbs. (207¼ kilog.)

*World's records.

COOK TO GET PILOT'S LICENSE

Elmhurst, Cal., November 6.—Weldon B. Cook, the amateur aviator, who has made a number of tryout flights at the Motordome here, has announced that he will soon try for his pilot's license.

Cook made a number of well-sustained flights today, not only attaining an altitude of 1,000 feet, and making half-hour flights, but carrying passengers as well. After his altitude try, he descended to the field, and seating his wife beside him, made several circuits. During the afternoon he carried several persons from among the spectators, alighting each time in good shape and without mishap.

Cook flies a Curtiss-type biplane made by Maupin and Lantieri, of Black Diamond, and equipped with an Elbridge motor.

Didier Masson is advertised to make flights in a Bleriot monoplane at the Motordome on Sunday, when the official automobile season will open. It is also announced that in the event of his failure to get away, Frank Bryant or Cook will be ready to take his place so that the spectators will not be disappointed.

Presidio of San Francisco Jottings

For the second time within a week Jeff de Villa has had his monoplane badly damaged while attempting to make a flight from Cavalry Flat to Ingleside. On Friday his first attempt was a failure on account of serious engine trouble. Today Villa was ready for the trial, but in crossing a ditch on the field a guy wire was severed and as the aviator rose in the air his plane turned turtle, throwing him to the ground. De Villa was unhurt, but was severely shaken, while his machine will require a great deal of attention before it will again be ready for use. The propeller was splintered and the chassis will have to be entirely rebuilt.

There is a renewed activity noticeable at the Presidio temporarily out of commission. Gates is looking around for Aviation field. Ivan Gates has purchased the original Green biplane, one of the first to be built in California, and is installing the Maximotor from the Criblett machine which is a motor of his own for permanent installation. He purchased his machine through the agency of the California Aero Manufacturing and Supply company from the original backers of Green and Crosby.

Roy M. Francis, who recently returned from a course of

instruction at the Gage school, at Los Angeles, is moving his Gage biplane, equipped with an 80-horsepower Hall-Scott, to the field, and is occupying De Villa's hangar until he can have another built.

Fisher Brothers of Oakland have applied to the commandant for space, and will occupy a hangar next to that of Criblett. It is not known what kind of a machine they will bring on the field. They have been conducting a number of experiments at their home and have kept their results secret.

De Villa expects to have his machine ready for service within the next week, when he will again attempt to fly to Ingleside.

Hughes Simon, representing Grahame-White, is in San Francisco for the purpose of promoting an aeroplane meet, to be held some time during the latter part of November. If successful, he will bring Grahame-White and Sopwith and several other well-known aviators to the Pacific Coast.

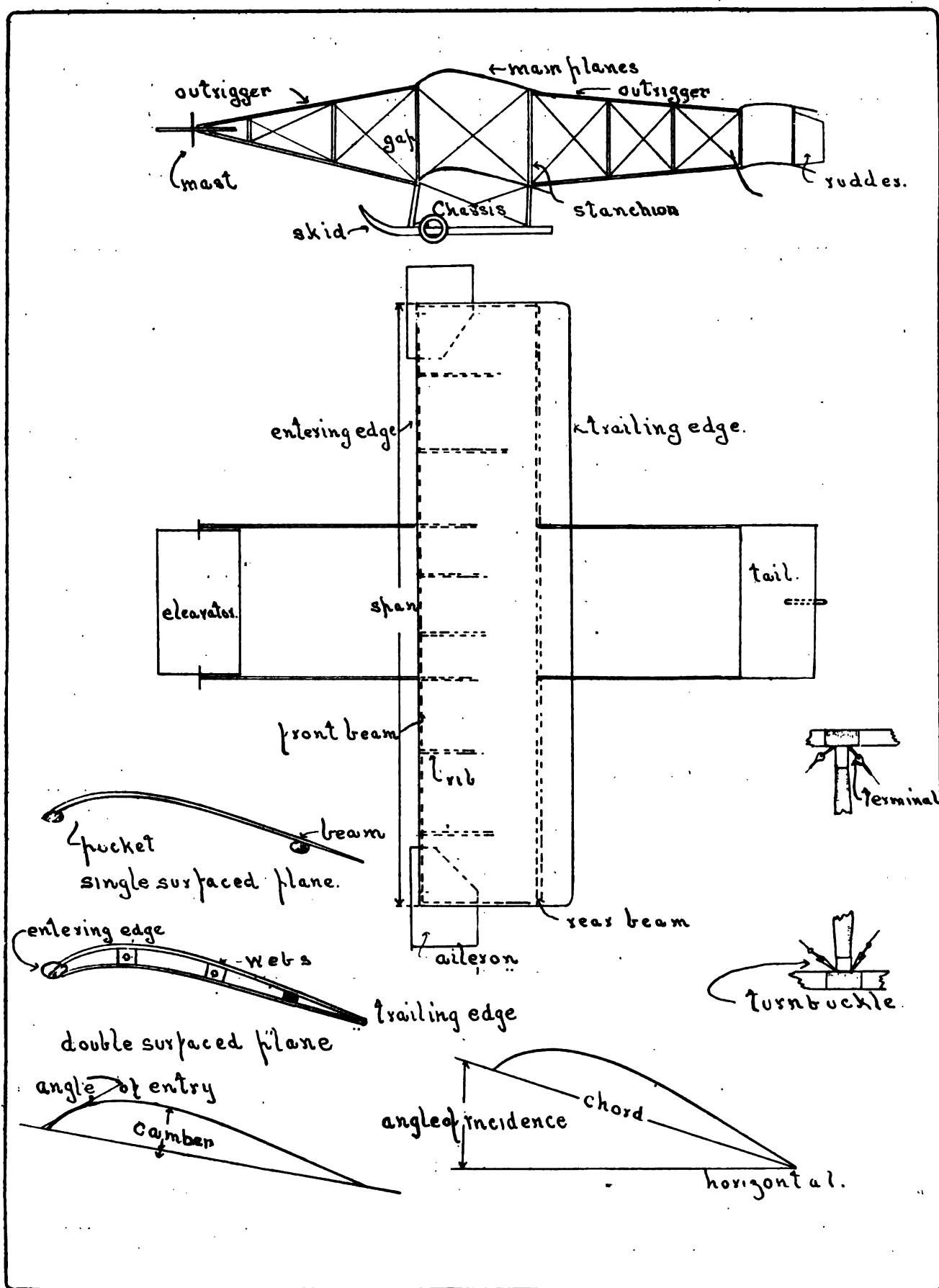
CALIFORNIA CLUB WILL HOLD MEET

Los Angeles, Cal., November 11.—The Aero Club of California is planning one of the largest meets in its history for the ten days from January 20 to 29 inclusive. The affair will be held on Dominguez field, which the club now controls absolutely by an option from the American Aviation Company which expires October 1, 1913. It is hoped that 30 or more fliers will take part in the meet and the club will try to raise a prize fund large enough to make it attractive to them to do so. Among other events planned for the meet are a real competitive race over a mile track and a 150-mile tour to be called the "Circuit of California."

STOLEN RIDE ENDS DISASTROUSLY

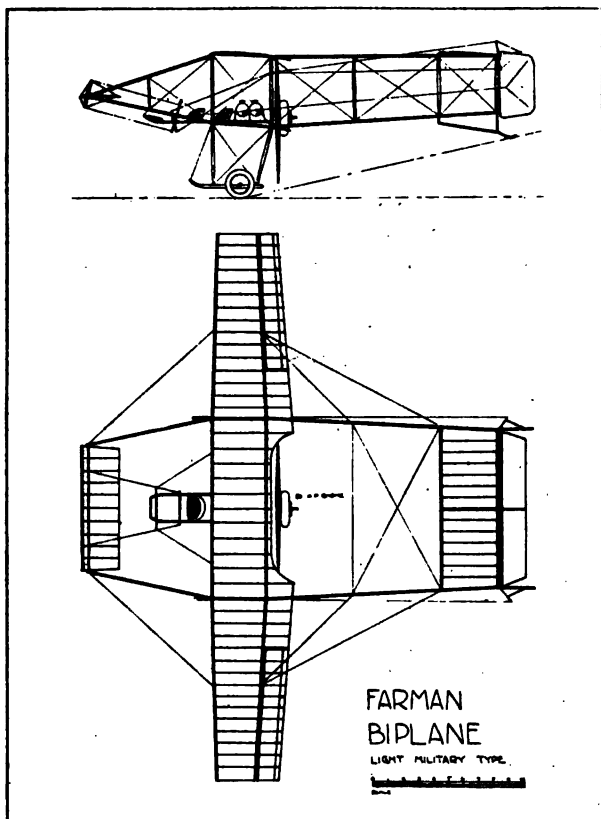
Vallejo, Cal., November 5.—An unknown boy damaged one of the aeroplanes at the factory of Paul Butler, in this city, on Sunday, by running off with the plane while no one was looking. The lad stepped into the seat of a Curtiss-type, and before he could be stopped had turned on the power and attained an altitude of 50 feet. He suddenly became scared and lost control of the machine, which descended rapidly to the ground, throwing the occupant out. The lad was apparently uninjured, as he immediately rose to his feet and ran away before he could be caught. This is thought to be the first case of a stolen joy ride in an aeroplane.

EXPLANATION OF AERONAUTICAL TERMS



HENRY FARMAN LIGHT MILITARY TYPE DESCRIBED

While some constructors in France, Maurice Farman, as a notable example, tend in the design to produce machines larger and yet larger in span, Henry Farman, in his latest machines, is producing aeroplanes which are more analogous to the monoplanes in speed, handiness and ease of transportability. His latest machine, the one which we propose to describe in this article, bears a strong superficial resemblance to his earlier models, but on closer examination it will be seen



that several refinements have been made, principally in the mode of construction.

The tail unit which until recently was formed of two inefficient, superimposed planes, has now given way to a rather more efficient monoplane type of tail, which possesses the practical advantage that it is not so likely to become smothered in lubricating oil as was the former type. To balance the removal of one of the tail planes, we find that the aviator is seated considerably more forward, and pilots who have flown machines of this type are unanimous in their opinion that the change has effected a remarkable improvement in the ease with which the biplane can be handled in the air.

Improvements have also been made in the construction of the main planes, and with a view to diminishing as far as possible all unnecessary head resistance, only 12 struts are employed in the bracing, as against 16 in the earlier models. The planes, now double-surfaced, have received a slight modification as regards their plan form, both leading and trailing edges tapering away towards the tips; this undoubtedly for the purpose of improving the appearance of the machine in flight. The top plane is fitted with extensions which give it an extra span of 13 feet, a feature which results in raising the center of pressure to a certain extent, and in a conse-

quent improvement of the stability.

The landing chassis has also been the subject of considerable modification, and with the similar view in mind of reducing resistance, four struts have been done away with, each skid at present being attached to the cellule by means of a pair of stout ash struts, strongly braced in position by piano wire. To facilitate landing, the chassis presents a track of no less than 13 feet. One seemingly bad point about the running gear is the fact that the skids have been cut much shorter, this tending to increase the admittedly remote possibility of a forward somersault, especially as the weight of the pilot is placed so far forward.

Changes in elevation are effected by two trapezoidal surfaces, one mounted forward of the cellule on ash outriggers, working in conjunction with another hinged to the rear edge of the tail plane. These are operated from the pilot's seat by a universally-jointed vertical lever mounted centrally between the pilot's knees, a feature which materially diminishes the physical fatigue in controlling in a gusty wind, that was such a bugbear with his earlier machines. Lateral balance is obtained by rocking the lever sideways, which motion operates the ailerons, each having a span of ten feet, hinged to the rear extremities of the upper surface. Steering to right and to left is brought about by a pair of vertical rudders situated at the rear of the tail, which are worked from the pilot's seat by means of a pivoted foot bar, and protection of the tail against contact with the ground is provided for by a short wooden skid attached to the tail booms by means of light elastic springs.

The motor, a 50-horsepower Gnome, is mounted in the customary position behind the main planes, and is direct coupled to a Chauviere propeller of 8 feet 6 inches diameter and 5 feet 3 inches pitch, which gives the machine an average velocity of 56 miles per hour. This speed, for a biplane, is considerable.

From a military point of view, the new Farman biplane possesses a great advantage in the combination of its speed and its weight-lifting qualities, for in addition to carrying a passenger to act part of observer, it can carry a large amount of petrol, so increasing its effective radius of action. Besides, it can very readily be dismantled and, more important still, has the property of being more than usually stable in a wind, for the contrary, in the case of a Farman, would be inaccurate.

FOREIGN NOTES

The Deperdussin firm has ever since its inauguration been noted for its activity, and its latest coup is the acquisition of the services of such a first-class pilot as Vedrines. Thus the Borel company, whose machines Vedrines flew, incidentally bringing it and himself into the glare of prominence, has lost yet another of the more talented members of its staff. It will be remembered that not long since both Morane and Saulnier parted company with the Borel people.

The Deperdussin firm is forming a new flying school at Pau, in the south of France, and to one of the best exponents of the machine, Busson, will be entrusted the instruction of the pupils.

E. PERCY NOEL, Founder-Editor

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The Editor is pleased to consider MS and photographs for publication, but only material that is likely to prove of interest to the readers of Aero. The Editor cannot undertake to answer technical inquiries except in the columns of Aero.

THE NEW GOVERNING BODY

One of the most important instances of progress during the present year has been the transformation of the Aero Club of America from a local New York clique seeking to govern aviation in America, for something more than the mere satisfaction of doing it well, to a truly national organization to stand for the best in the scientific and sportive side of aeronautics.

The change has not come suddenly, but gradually the old selfish form of government, the monetary interest, all the objectionable features that made the Aero Club of America the object of foreigners' jests and Americans' disgust have been removed.

The club starts its new year this month, a remodeled association—rather an association than a club—with its main object to represent the United States abroad faithfully, and to govern aviation at home honestly and fairly.

The club might well have been called a year and longer ago "the Aero Club of New York," but now, despite the fact that a club house is maintained in the metropolis, the actual Aero Club of New York is the local club, and is affiliated with the Aero Club of America. This means that the officers of the national organization will not be tempted to govern for their financial benefit, nor for the benefit of the corporations in which they may be interested.

To avoid even the appearance of evil, and to preclude the possibility of a repetition of what happened when the Gordon-Bennett aviation cup was brought to America last year, Robert J. Collier, the new president of the Aero Club of America, has ceased to be a director in a prominent manufacturing and patent-owning company. Furthermore, he has ceased to be connected with this company in any conceivable manner, coming to the national executive position free to preside in the best interests of aviation in general.

The board of directors of this club year is made up of representative men from all over the country, who will have equal voting power with the members of the board who live in New York. Chicago, St. Louis, Detroit, Philadelphia, Washington, Boston, Pittsburg and Kansas City are represented by men who are enthusiastically interested in aviation. Maj. Samuel J. Reber, whose untiring efforts have done wonders to make the Aero Club of America officially clean; Harold S. McCormick, who made the first great open aviation meeting in America a success from the airman's standpoint; Henry A. Wise Wood and James A. Blair, Jr., sportsmen whose devoted efforts have cleared many a dark day—these are other members of the board; the vice-presidents.

Evidently the Aero Club of America is now a working organization of men who can and—we believe—will work wonders in wiping out the past and making our national club stand for and represent us fairly in the eyes of the whole aero world.

But the new club needs assistance. To be successful it must have the confidence of every follower of aeronautics.

Lend a hand.



Activity of Aviator and Builder

M. H. Graham, a typewriter repair man of Ottumwa, Ia., has purchased a Farman-type biplane from a disgraced amateur of Fort Dodge and is working hard to get the biplane ready for flights.

It is reported that A. F. Kefflo, of Muscatine, Ia., qualified for his pilot's license while in Boston recently.

In Indianapolis, Ind., G. L. Bumbaugh, the veteran aeronaut, will make an effort to revive the old Aero Club of Indiana, which was allowed to die out when the aeroplane began to be popular. He intends to address the members of the Commercial Club upon the subject.

THE DIARY OF FLIGHT

THURSDAY, NOVEMBER 2.

Louisville, Ky.—P. O. Parmelee flew over the city.

FRIDAY, NOVEMBER 3.

Hopkinsville, Ky.—James K. Ward flew. C. N. Lockwood attempted to fly Judge G. O. Prouse's biplane, but ran into a ditch when he was forced to land by engine trouble. The momentum was light at the time of the accident and damages to the frame of the machine were all that resulted.

Louisville, Ky.—P. O. Parmelee and Clifford Turpin flew, participating in an aero-military spectacle entitled "On the Mexican Border." They were assisted by the Kentucky National Guard.

SATURDAY, NOVEMBER 4.

Louisville, Ky.—P. O. Parmelee and Clifford Turpin flew.

Los Angeles, Cal.—D. C. De Hart, of the Eaton School of Aviation, flew from Hyde Park field out over the ocean, visiting the battleships anchored off Long Beach, Cal. On the return to the field he was compelled to land about half way from Long Beach and replenish his fuel supply. Up to this time he had covered some 45 miles in 50 minutes. The last of 15 miles was covered in 40 minutes against a puffy head wind.

SUNDAY, NOVEMBER 5.

Louisville, Ky.—P. O. Parmelee and Clifford Turpin flew, presenting "On the Mexican Border" a second time.

Terre Haute, Ind.—Louis Johnson flew for 15 minutes in the Johnson monoplane. He attained an altitude of 150 feet and landed within 25 feet of his starting point.

Elmhurst, Cal.—Weldon B. Cook made several flights in a home made Curtiss biplane fitted with an Elbridge engine. He attained an altitude of 1,000 feet and on one flight was in the air 30 minutes.

MONDAY, NOVEMBER 6.

Fort Smith, Ark.—Lincoln Beachy and Beckwith Havens flew, carrying 400 pounds of mail during the afternoon. They carried mail from the field to the post office in the city and dropped sacks near the building. Havens' sack struck on the roof of one wing of the building and tore a hole in the metal roofing. Beachy, in dropping his sack narrowly missed hitting a group of workmen.

TUESDAY, NOVEMBER 7.

Kinloch, Mo.—Antony Jannus flew 14 minutes.

WEDNESDAY, NOVEMBER 8.

Kinloch, Mo.—Antony Jannus, Albert Elton and G. W. Beatty flew.

THURSDAY, NOVEMBER 9.

Kinloch, Mo.—G. W. Beatty flew from bad ground where he had landed on Wednesday and returned to the field.

FRIDAY, NOVEMBER 10.

Wichita, Kans.—Hugh Robinson flew, falling 30 feet shortly after leaving the ground.

SUNDAY, NOVEMBER 12.

Terre Haute, Ind.—Louis Johnson flew. While at a height of 300 feet his motor stopped but he succeeded in gliding safely to the field.

SAM BARTON'S HEADLESS BIPLANE

Sam Barton, the builder of a Curtiss-type machine, has been making good flights at Belmont park. His best performance was made last week, when he flew from Belmont park to Westbury and return. His machine is provided with the old-style Curtiss tail and in order to get the effect of the double elevators he has arranged the controls so that the whole rear surface moves.

Art Smith, of Fort Wayne, Ind., has been making successful flights in his biplane for more than two weeks. The machine, which is the product of two years' work, was begun when Smith was 18 years old, and it was necessary for his mother to mortgage her farm in order to provide a propeller and engine. Smith has executed a double figure eight successfully and has been in the air 11 minutes on a cross-country flight.

It is the plan of the American Aviation Company, recently incorporated in Memphis, Tenn., to make that city the aviation center of the south. The company has taken a lease on the Driving park and it is planned to start an aviation school there, which will use both Curtiss and Wright machines. The corporation is headed by Louis Mitchell and it will have as instructors, Oscar J. Brindley, Eugene Heth and C. Myers. There are two Wright machines already on the ground, while a Curtiss-type biplane is on the way. Both Brindley and Mitchell are licensed pilots. Edward J. McCormack, who was formerly with the Moisant International aviators, has been made general contracting agent for the south for the American aviators and he reports that he will, in all probability, be able to get engagements for every week next summer. The school opens December 1.

Lyman T. Seeley, who was until recently sales manager for the Elbridge Engine Company, has been appointed special representative for Roberts Motor Company for the three states of California, Oregon and Washington. He is handling a full line of Roberts' marine, aeronautic and stationary motors, and has his home office at 781 Golden Gate avenue, San Francisco.

It is reported that aviators from the Curtiss forces are about to invade Mexico. If this is true, the competition between the Curtiss and Moisant exhibition teams will be interesting to watch.

Aero Club of Saint Louis

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ENROLLING MEN FOR ARMY AVIATION

St. Louis, Mo., November 13.—The local United States Army recruiting station in the Old Custom House, corner Third and Olive streets, St. Louis, is accepting men with previous experience; which will be of value in such work for the aeronautical service. It is in charge of Major Frank R. Lang. Men are enlisted for the Signal Corps and sent to College Park, Md., where the Army Aviation field is located. James C. Kirtland, Anson C. Brown and Arthur H. Mix have recently enlisted for this branch of the service.

TO HAVE HELP FROM GENTLER SEX

New York, November 11.—Those lucky aviators who are followed from one aerodrome to another and looked after by wives or sisters—the latter either their own or somebody else's—will at least give their moral support to the woman's auxiliary to the Aeronautical Society that is now in process of formation. According to Mrs. Hugo C. Gibson, the wife of the propeller maker, the purpose of the auxiliary is to foster the art of aviation, and encourage the men to do the flying. The members of the new organization needn't necessarily fly. The ladies' aid will also look after women aviators at flying meets. Mrs. Gibson, at the first meeting of the "aid,"

in New York, last week, pointed out that during the recent meet at Nassau boulevard, there should have been a committee of women to look after Mile. Dutrieu, Miss Quimby and Miss Moisant.

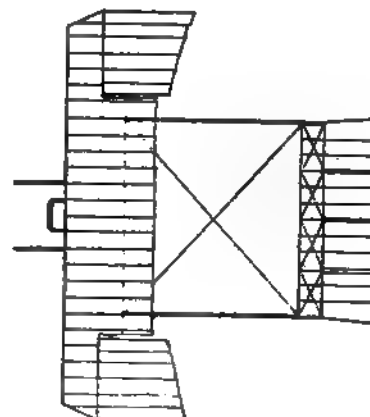
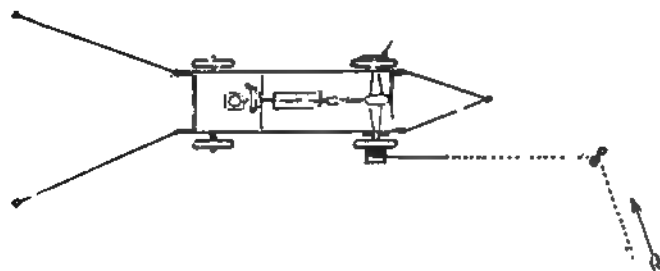
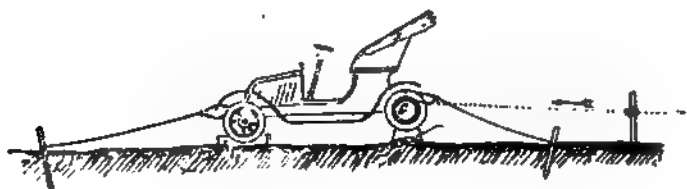
It was decided to hold another meeting on November 21, to perfect plans. The prime movers in the scheme in addition to Mrs. Gibson are Miss Harriet Atkinson, Mrs. O. Hogstedt, Miss O. Spody, Miss Daisy Ball, Mrs. G. Lonedoy, Miss Irene Supo, Mrs. D. D. Suydam and Edward Durant and Geo. S. Bratt, members of the Aeronautical Society.

FOWLER TO FOLLOW SOUTHERN COAST

El Paso, Tex., November 13.—Robert G. Fowler arrived here this morning at 11:40 o'clock, with 850 miles to his credit on his cross-country tour. He has been delayed for eight days in Mastodon, N. M., where the sand was so deep as to make it impossible for him to leave the ground. He finally got away by starting from a push car on the railroad tracks. He flew from Douglas to Mastodon on November 5.

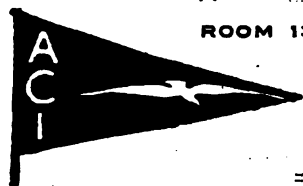
He is now planning to go to New Orleans by way of Fort Worth and Dallas, and he says he will start for Fort Worth, either Tuesday or Wednesday. After this it is planned that he will follow the southern coast to New York. He calls his experience at Mastodon, N. M., one of the most unique he has ever had.

E. R. Armstrong, who has been engaged for a year in developing and designing the monoplanes to be sold by the Brooks company, says that his experience taught him some valuable points which should not be overlooked by amateur builders. The company started with an exact copy of the Bleriot, he says, but this was never satisfactory when equipped with an American motor, heavier than the light European engines the Bleriot is designed for. It was necessary to almost quadruple the strength of the front construction before it would stand the shock of landings on rough ground with a motor. His whole experience might be compressed into the saying, "weight in the engine makes no difference if you only make extra provision for it."



Illustrating the M. Leyat Glider and Method of Launching from a Monorail, using the Power of a Small Automobile to Operate a Windlass on the Rear Axle.

THE AERO CLUB OF ILLINOIS



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AIR-CRAFT IN NAVAL WARFARE

Of what is the aeroplane capable? It can rise from the water, fly with a passenger 200 miles out and home again at a speed of 50 miles an hour. To what use can such a machine be put in naval warfare?

Bomb-dropping on warships is not likely to be effectual. Any aeroplane should be kept at least 3,000 feet by massed and controlled rifle fire. The difficulty of taking up a position on a moving ship in a wind must be considerable. And if a hit is scored, what of it? A 300-pound bomb, dropping from 6,000 feet, strikes with a velocity of 620 feet a second. An eight-inch gun, at 12,000 yards, does more than this, and an eight-inch gun at 12,000 yards does not do much harm when it hits. 200 pounds of guncotton exploded by a torpedo on a ship's bottom, well tamped by water, blows a bit of the bottom in, but probably does not sink the ship. What then will guncotton do on her upper deck? There is no future for bomb-dropping on warships.

Naval works ashore are more open to such attack. Incendiary bombs need not be very heavy, and dropped into a dock-yard store or an oil fuel tank cannot fail to cause inconvenience. The caissons of docks and canals should also prove suitable targets.

The aeroplane's best chance of excelling lies in scouting. She can see over brick walls no one else can see through. Released from an enemy's cruiser some ten miles away, she can fly over a harbor, record every ship in dry dock or out in the stream, inspect the work on the ships, perhaps catch the fleet preparing to go to sea, and get back on board again in three or four hours. So much is practicable today.

Again, a cruiser sighting smoke on the horizon, the dark little clouds at regular intervals that mean a fleet. Today she would close cautiously, endeavoring to count the ships, make out their class and formation, course and speed. Before her work was half done she would probably be driven back. But if she could only stop and loose an aeroplane, it could quickly rise, and from its height gain all the necessary information, with an accuracy unobtainable any other way. Then a swift return to her ship, which might all the while be pelting full speed for home and safety, and who would wireless her news on to the proper quarter.

As to submarines, the turbid waters of the Channel and the North sea would hide a submarine as effectually as soapy bath water does the nailbrush. In blue water, though, they will probably be visible, and the presence of friendly aeroplanes will soothe the nerves of any fleet expecting submarine attack. And here the aeroplane in its bomb-dropping capacity may come in. She can fly down to the very surface of the water, unseen and unexpected by the submarine itself, and let go her guncotton bang over the boat. Submarines cannot dive deep to make themselves invisible and avoid attack, for not only must they occasionally put up their periscopes to makee-look-see, but the pressures at over 100 feet deep, 50 pounds to the square inch, are prohibitive. Up to date no other means of attacking submarines existed, and

aerial attack seems to be the only possible one. Some years ago at the Hippodrome I saw a lady making rubies. In the process she used some fiercely burning powder. To exhibit the temperature of this powder she placed some on an iron plate over a glass cylinder of water closed at the bottom by another iron plate. Lighting the powder, it whistled through the top plate, through the water, and out through the bottom plate. It would interest and amuse me to treat a submarine with a large quantity of that powder, experimentally.

Further possibilities lie in gun control. At present the gun fire of a man-of-war is controlled by an observer, called a "spotter," high up the mast. He gets up the mast, a dangerous, vibrating, nasty, smoky place, because from a height he can see better how far over or short his shots are falling than from a low position. The Yankees have even built enormous latticework towers for their "spotters," and we tripod masts.

In fact, the observer gets as high up as he can, while retaining reliable communication with his transmitting station. Today, the mast-head; tomorrow, an aeroplane.

Now, above all things, in gun control efficient communication is important. From aeroplane to transmitting station at first wireless seems simple, but it is too open to interference from the enemy's ships. A visual means of signalling will have to be adopted, probably by the Morse code.

Once single ship control from an aeroplane is obtained, the control of a whole squadron's firing will be much simplified, all ships being equally well able to take in the signals from one aeroplane.

Another way the aeroplane may make itself useful is in doing the duty of "passing ship," i. e., pass the signals from one ship of a long line to another of the same line. This suggests the propriety of an admiral hoisting his flag in an aeroplane!

The great disadvantage an aeroplane suffers from for fleet work is her lack of slow speed. An aeroplane cannot keep station on any man-of-war; nor in its present form is it ever likely that that will be possible, except under exceptional circumstances of wind. If the wind is with the fleet, the same speed, the plane would have to remain suspended in the air without motion through the air. Observing from a circling aeroplane must be very tedious, especially when many aeroplanes from each side are present. The helicopter or airship seems bound to develop for these purposes.

The quality most wanted in seagoing aeroplanes, besides those in land aeroplanes, is ability to rise from a heavy swell or choppy sea, or from the deck of a rolling ship. In many cases, when the wind is quite moderate enough for flying, the fore-castle of a ship will be washed down if steaming head to sea, and so the aeroplane should rely on no help from the ship in this direction. The deck space needed should not be large, nor their stowing space great, or they will not be carried in all men-of-war, but only in special mother ships.

S. H. S. M., in Flight.

FOREIGN NOTES

The inauguration of an aerial mail scheme in England has inspired the formation of similar projects on the Continent and elsewhere. The latest scheme is to form a service in South Africa between the two main commercial centers, Cape Town and Johannesburg. As these cities, a thousand miles apart, are served by a very inferior railroad service, delivery of mails between them by aeroplane is a suggestion of real practical value. The two pilots who are undertaking this project are C. Compton Paterson and E. F. Driver, both of whom were until recently connected with Claude Grahame-White. The former is to fly a biplane of his own construction and the latter, who is a native of South Africa and who participated in the English Aerial post, is flying a Gnome-Bleriot of the latest type, the actual machine used by Audemars in the circuit of Britain.

DATES AHEAD

Savannah, Ga., November 14-29, Curtiss aviators.

Los Angeles, Cal., January 20-29, competitive meet.

AERO MART

These Notices Bring Results

ALL WANTS 1c A WORD FOR SALE and FINANCIAL, ETC. 2c A WORD

PAYABLE STRICTLY IN ADVANCE

BOX NUMBERS

If desired, replies may be received at the offices of the Aero Publication Company. Advertisers wishing to take advantage of this convenience will pay 10 cents extra for registration, to cover the cost of forwarding replies.

SITUATIONS VACANT.

AVIATORS—Wanted, two more young men on our contract on salary and commission, to start at once taking flying lessons on our Bleriot-type flyer. When competent will be sent on exhibition contracts. You can sign now with an established company and get into the flying business while big money is being made. \$1,000 cash deposit required as security. No charge for instructions given or for damage to machines. Your deposit returned in full. We furnish the machines, you do the flying. National Aero Co., 40 East Eighth St., New York.

AVIATOR—Wanted, licensed monoplane aviator. Give particulars as to instruction and experience. Box 163, Aero, St. Louis.

SITUATIONS WANTED.

ASSISTANT—What individual or factory will give me a chance to obtain experience with motors and engines, during the winter months, with a possibility to take up aviation next spring? University graduate. Address W. Spalter, 985 Third Ave., New York City.

ASSISTANT—Young man desires identification with parties in the exhibition field. Has general knowledge of various types of machines; will furnish \$150.00 to responsible party. Address Box 166, care Aero.

AVIATOR ASSISTANT—Young man, 24, desires position with party or manufacturer preferably, with chance of becoming aviator. Have good experience with Curtiss biplane. Location immaterial, trustworthy and obliging. Salary very small. Box 169, Aero, St. Louis.

ENGINEER—Graduate technical engineer with several years' experience in experimental engineering, desires technical or commercial position with manufacturer or dealer in aeronautical apparatus, involving either development work on apparatus, or the commercial handling of supplies and products. Willing to qualify as aviator. Location immaterial; south or west preferred. E. S. Burnett, Sibley Mechanical Laboratory, Ithaca, N. Y.

HELPER—Young man, 19, wishes to obtain position as helper with some aeroplane concern. Address 1123 Thirteenth Ave., Moline, Ill.

YOUNG MAN, 22, temperate, technical education with factory and road experience on monoplanes and biplanes, wishes employment, preferably with chance of becoming aviator; references. Moderate salary. Verdler Burwell, 161 W. Thirty-sixth St., New York.

FLYING ENGAGEMENT WANTED.

HAVE GENUINE BLERIOT monoplane complete, and flying daily, would like to hear from booking agencies or aero-

nautical houses for purpose of giving flying exhibitions anywhere in United States, Mexico and South America. Box 170, care Aero, St. Louis.

LICENSED AVIATOR—Aero Club of France, Bleriot and Farman flier, is open for position. P. M. S., 985 Elboren Ave., Price Hill, Cincinnati, Ohio.

MISCELLANEOUS WANTS.

MOEDEBECK HANDBOOK—Wanted a copy of Moedebeck's Handbook. Will pay \$2 for second-hand copy in good condition. Box 200, care Aero, St. Louis.

PHOTOGRAPHS—Wanted, photographs of balloon race of October 5, 1911, at Kansas City. Will pay \$3 for a picture of the Berlin II; also any other good photos of that race. Warren Oehrle, 2567 Dodge St., Omaha, Neb.

FOR SALE.

ADVERTISING MACHINE—For sale, U. S. patent automatic advertising electric machine; very large daily profit, with small investment of money. J. Bandieri, 111 Garfield place, Cincinnati, O.

AIRCRAFT SUPPLIES—Aeroplanes for sale and built to order; propellers, models and model stock; Chicago engines; flying models. Chicago Aero Works, H. S. Renton, Prop. 164 N. Wabash Ave., Chicago, Ill.

AIRCRAFT SUPPLIES—Aeroplanes for sale and built to order. Submit your designs and get our prices before going further. Propellers, wheels and fittings made to order. The Eaton Brothers Factory, 1708 Echo Park Ave., Los Angeles, Cal.

BLERIOT monoplane equipped with 60-horsepower engine with or without motor. Has flown. How much money have you? Will treat you right. Box 146, care Aero, St. Louis.

CARBURETER—For sale, one Schebler 1¼-inch aluminum carbureter; complete and ready for attachment to aviation engine. Very slightly used. A. V. Reyburn, Jr., 5305 Delmar Boul., St. Louis, Mo.

GLIDERS—20-foot biplane, \$30; with elevator ailerons and skids, \$50; with elevator, etc., tower gliding rail, etc., \$75. John Frier, 5833 Julian Ave., St. Louis.

PROPELLERS—To 8-foot, any pitch, \$20. John Frier, 5833 Julian, St. Louis.

MOTOR—Roberts 4x50-horsepower motor, new, used only half hour. Complete with radiator and gas tank. Guaranteed; reasonable. Box 168, Aero, St. Louis, Mo.

MONOPLANE for sale, Santos Dumont-type aeroplane, 30-horsepower, magneto, extra wings. First bidder at \$600. Address Carath Oval Tubing, Worcester, Mass.

OXY-ACETYLENE WELDING—Cracked or broken aeroplane cylinders repaired, without patching. Steel tubing, aluminum plates, angle braces, and all other metal parts welded with the oxy-acetylene process (guaranty for strength and reliability). Estimates and all information free. Simon & Devine, expert welders and brazers, 3932 Olive St., St. Louis, Mo.

UP-TO-DATE PLANES AND MOTORS—Nieuport monoplane, latest type passenger-carrying machine fitted with 70-horsepower Gnome motor, holder of all American records for speed and altitude with passenger; Grahame-White Baby biplane fitted with 50-horsepower Gnome motor; Farman-type biplane fitted with 50-horsepower Gnome motor, two 50-horsepower Gnome motors. All ready for immediate delivery in New York. For prices and full particulars apply Box 50, care Aero, New York.

FINANCIAL.

MANAGER—Wanted, person to act as manager and take interest in aviation company. Some capital required. Address Box 159, Aero, St. Louis.

PARTNER—Wanted partner with 25 or 30-horsepower motor. Have good monoplane 25x22 feet, 7 foot cord, 180 foot lifting surface. Good chance for man with small capital. Correspondence solicited. T. Willoughby, San Leon, Tex.

PATENTS—Patents, gas engines, motor vehicle and aeronautical work a specialty. John O. Seifert, Solicitor of American and foreign patents, designs and trademarks. 500 Fifth Ave., New York City.

MODELS AND MODEL SUPPLIES.

MODEL PROPELLERS—6-inch 30 cents, 10 cents each additional inch; ball-bearing shafts 30 cents, reed and rubber 1 cent per foot. Catalogue for stamp. Short-Caniff Co., Marlboro, N. Y.

MOTOR—"Is your model successful?" if not, why? A good model and an adequate motor are essential to flight. If you haven't both, failure is inevitable. If you have the model, the "Cellulose Turbine" will complete your equipment. Correspondence invited. The Co-Operative Aero Association, Muncie, Ind.



1,007,789, November 7, 1911.—David Leslie Mobley, Los Angeles, Cal. A flying machine comprising a frame, two triangular main aeroplane members connected at their forward ends to said frame and extending rearwardly therefrom, and a triangular rear aeroplane member connected at its forward end to the aforesaid aeroplane members intermediate their length, and extending from such point of connection rearwardly beyond the rear ends of said main aeroplane members.

1,007,810, November 7, 1911.—Thomas A. Snyder, St. Louis, Mo. A flying machine comprising a frame having parallel series of overlapping planes in the upper portion thereof, elevating planes below the overlapping planes, shafts mounted on the frame of the aerostructure, frames mounted to swing on said shafts, and helicopters on said frames and driven by said shafts.

1,007,827, November 7, 1911.—Russell Rufus Waterman, Upland, Cal. A flying machine comprising an upper main plane and a lower main plane connected together, propelling mechanism therefore a vertical shaft extending below the lower plane, and another vertical shaft extending concentrically with the first shaft through both main planes, a balancing plane connected to the lower shaft below the lower plane, an arm projecting from the upper shaft, an arm projecting from the lower shaft, in a direction opposite to the first arm when the two shafts are in a central angular position, a foot lever pivoted to swing in a horizontal plane, and a connection from each of said arms to substantially a single point on said foot lever.

1,007,926, November 7, 1911.—Clarence E. Darrow, Fairbury, Neb. A flying machine embodying a main plane, a longi-

tudinal shaft journaled on the main plane, a gear carried by said shaft, transversely extending beyond the ends thereof, pinions upon the inner ends of said transverse shafts meshing with said gear, oppositely movable vertically swinging stabilizing planes upon the extended ends of the transverse shaft, rods fixed to and depending from the longitudinal shaft, means for guiding and sustaining the lower ends of said rods, said guiding and sustaining means serving to limit the lateral motion of the machine relative to said rods, and a passenger car carried by the rods to operate with its load weight as a pendulum for maintaining the rods and longitudinal shaft in a fixed position and establishing relative motion between the same and the transverse shafts through the described gearing when the machine tilts laterally, whereby the stabilizing planes will be automatically adjusted.

1,008,096, November 7, 1911.—Hugh L. Willoughby, Newport, R. I. An airship having suitable body planes, front and rear controlling planes independent of the body planes held at a distance in advance and in rear of the said body planes and having operating means connected thereto for simultaneously adjusting both of the said controlling planes at reverse angles above or downwardly below a horizontal plane, the front controlling plane being positively held against lateral adjustment in opposite directions, means connected to the rear controlling plane for independently adjusting the latter in opposite lateral directions, and a propeller interposed between the body planes and the front controlling plane and in advance of the body plane.

1,008,131, November 7, 1911.—Anwyl O. Gardiner, Oakland, Cal., assignor of one-half to Diedrich Knabbe, of same place. A flying machine provided with a supporting surface having laterally extending wings, cradles upon the wings, gas-filled buoying bodies resting in the cradles, and fastenings connected with the cradles and enveloping the bodies to detachably hold the same in position.

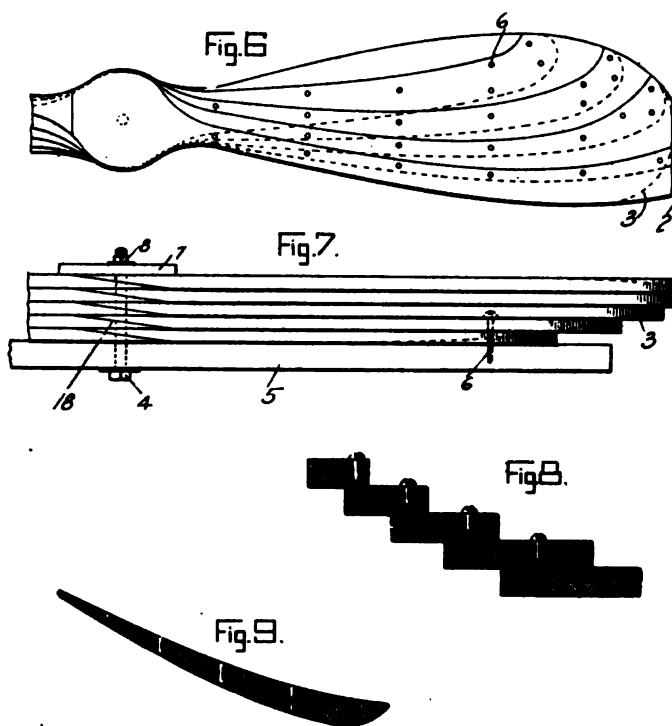
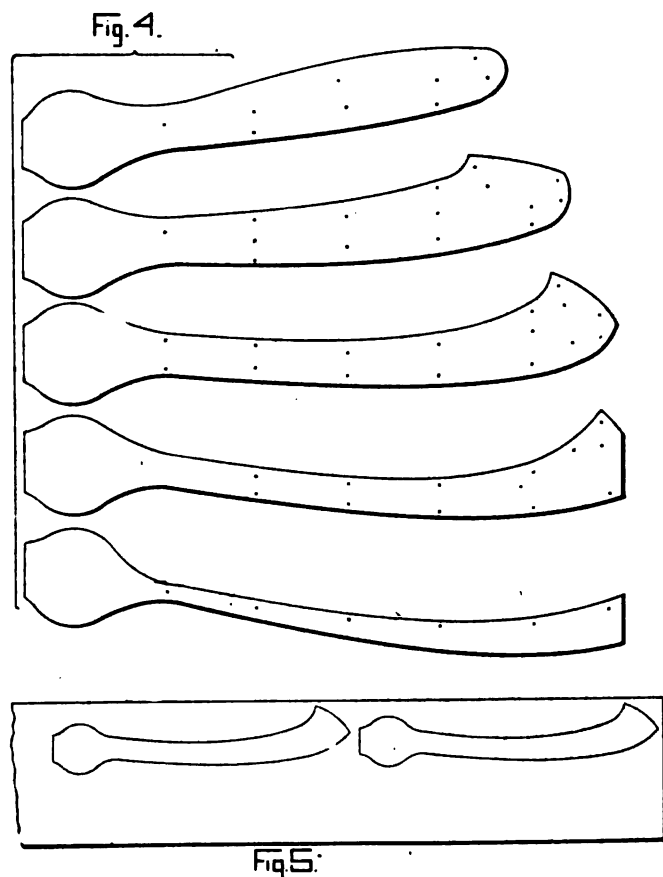
1,008,152, November 7, 1911.—Iskander Hourwich, Washington, D. C. A flying machine having supporting planes, and a pair of parallel balancing planes projecting from each end of the supporting planes parallel therewith so as to leave an air passage between the balancing planes and the ends of the supporting planes, the balancing planes of both pair converging toward each other and having an air passage there-between.

1,008,258, November 7, 1911.—Arthur S. Greenamyre and Alfred Hallett, Los Angeles, Cal. A flying machine comprising upper and lower aeroplane members, the outer end portions of the upper aeroplane member extending horizontally, and said upper aeroplane member being bent downwardly at its middle portion to substantially the level of the outer ends of the lower aeroplane member and the lower aeroplane member extending horizontally at its outer portions and parallel to the upper aeroplane member and having portions extending downwardly and inwardly from such horizontal portions beneath the downwardly bent portions of the upper aeroplane member, and a horizontal platform connecting such downwardly extending portions of the lower aeroplane member, the upper and lower aeroplane members being spaced apart a uniform distance from front to back and from the outer ends to the middle, providing a passage of uniform width transversely and longitudinally of the machine.



AERO is the leading aviator's paper.—H. R. Cruickshank, Cincinnati, O.

THREE PATENTS ALLOWED SPENCER HEATH



The Commissioner of Patents has issued drawings and specifications covering three patents allowed to Spencer Heath, covering what is known as the Paragon propeller, which are probably of the kind the most comprehensive and complete ever published. The chief objects of the invention are to produce a propeller having such variation of blade form and pitch to insure the most efficient propelling action and the least disturbance of the fluid—air or water—transversed, and to provide a method and means of constructing propellers conveniently, substantially and precisely, according to predetermined designs.

The first patent, No. 4,241,244, refers to the ornamental design which characterizes the Paragon blade. The second, No. 998,897, covers the lamination of the blade, but covers the construction by no means as thoroughly as does the most recent patent allowed, No. 1,006,209, in which ten broad claims are made.

In the latter patent, Fig. 4 is a plan view of the unassembled laminations forming a propeller blade, Fig. 5 is a plan view showing the selection of material for the corresponding parts of different blades, Fig. 6 is a plan view of a blade assembled, Fig. 7 is an elevation of Fig. 6, Fig. 8 is a typical cross-section through Fig. 6, Fig. 9 is a cross-section similar to Fig. 8 showing the finished contour and dowel-secured joints.

Heath sets forth the construction, and his patent claims, as follows:

"Having determined the pitch and the form of the blade section and the number and thickness of laminations to be used in each blade (or in the pattern for casting it), the exact plan form of each lamination is laid out on a drawing and transferred to the material, which is then sawed out in duplicate or triplicate (according to the number of blades) to produce a set of laminations for each blade as indicated in Fig. 4. By making separate laminations for each blade and joining them at the center as shown at 18 in Fig. 7, it is possible to select for each duplicate pair material of almost identical texture from adjacent portions of the same piece

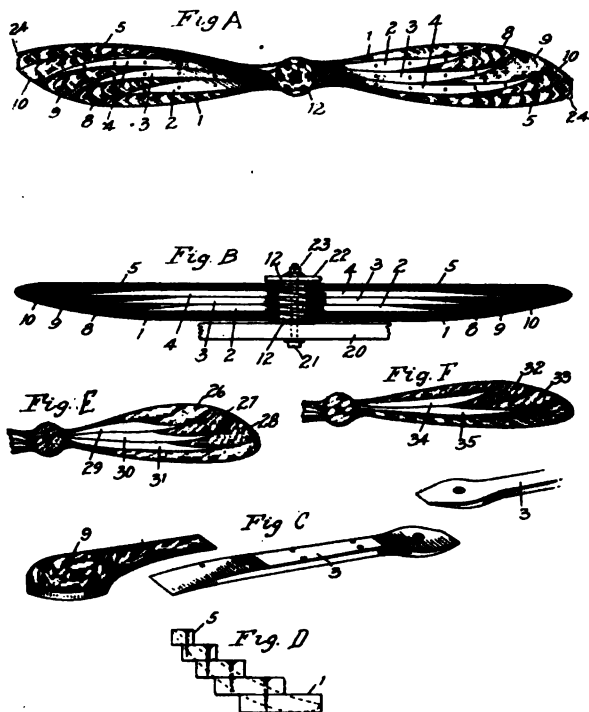
of timber and to duplicate almost exactly in the corresponding parts of each blade the lines showing the grain of the wood. This correspondence or duplication of the grain of the wood in the blades insures that in case of any warping or twisting, the same will occur in both blades alike instead of oppositely as must happen when the laminations for the opposite blades are of one continuous piece instead of being scarfed together at the hub.

"Fig. 5 shows how the material for duplicate laminations is cut from adjacent parts of the same timber. After the material is selected, the corresponding portions are laid together and sawed out to pattern in duplicate or triplicate, according to the number of blades. In this manner not only does the grain of the wood correspond throughout the several blades, but the grain is so selected that every portion of the finished blades shows the fine edge or quartered grain without any flat or "bastard" grain whatever. The separate blade laminations are scarfed or tapered at the hub end, so they will fit together properly, each terminating in a thin feather edge at the opposite side of the hub, the full thickness of each being preserved where it enters the hub, in the case of two blades, and one-third of the thickness of each at this point being removed when there are three sets of laminations to be joined together at the hub for a three-bladed propeller. Each lamination is not only cut out to its correct plan form, but is also drilled to template with numerous holes so located that when correctly assembled with glue in the joints the holes in adjoining laminations will correctly register. Screws or bolts are then conveniently inserted in the registering holes and drawn up to give the necessary contact and pressure between the surfaces glued.

"Fig. 8 shows clearly how the screws serve this purpose. After the glue has set the screws are removed and the holes reamed out smoothly and plugged with dowels secured driven with glue. It is then only necessary to remove the surplus material outside the dotted contour in Fig. 8, after which each section of the finished blade will appear as in Fig. 9. The shape of

the blade at each section is governed accurately by the joints between laminations, and the material is accurately and rapidly removed without the use of curved templates to give the shape of the face and back of the blade.

"The advantages of using laminations previously cut in duplicate or triplicate to the exact form that they are to have in the finished blade are obviously great, the only disadvantage being that with the customary hand-screws for clamping, it is wholly impracticable, if not impossible, to secure the necessary contact and pressure of the glued joints without great difficulty and inconvenience and almost certain danger of springing and distorting the blade as a whole. This difficulty



arises from the large number of clamps required, the inaccessibility of the joints when the propeller is secured and built up on a bench or plank (as it must be to insure correct laying of the pieces without warp or twist and the blades opposite or correctly spaced when there are more than two), and the lack of support where the upper laminations project beyond the lower ones. Even if there were no other difficulties attending the use of clamps or hand-screws, it is entirely probable that the glue would become set before a sufficient number of clamps to close all the joints could be placed. Using the screws as indicated in Figs. 6 and 8, they are so located and distributed as to draw the joints together in the most simple and effective manner without causing any stresses whatever, except between the immediate surfaces to be glued, and each lamination can be immediately secured to the one below it while the glue is still fluid and warm.

"A further advantage attending this mode of clamping with screws in previously located holes in ready-shaped laminations is that it incidentally provides the holes and determines the most favorable location and distribution of the dowels that are afterward to be put in as additional security against separation of the joints, especially in case of moisture or other unfavorable conditions affecting the glue or cement.

"When the laminations are ready to be assembled and glued as shown in Figs. 6 and 7, a bolt, 4, is set upright in a bench or slab, 5, and as the laminations are placed the hub of the propeller is built up around this bolt as a center, after which a block, 7, is placed on top and the nut, 8, screwed down to clamp all the joints at the center. One or more of the screws binding the second lamination to the first is made of sufficient length to penetrate the slab as shown at 6 (Fig. 7), and thus bind the extremities as well as the center of the propeller securely in their correct position on the slab, 5.

"For convenience in marking the edges and ends, the pro-

peller blades usually are first made square on the ends, as shown at 2 in Fig. 6, and after the blades have been brought to a surface, their ends are rounded off as shown by the dotted line, 3.

"What I claim is,

"1. A screw propeller blade having variable pitch at different blade lengths, the pitch being maximum in the region beyond the half blade length from the axis, and diminishing therefrom toward either extremity of the blade.

"2. A propeller blade having variable pitch and variable width at different blade lengths, the pitch being maximum in the region of the greater blade width.

"3. A propeller blade having variable pitch and variable width at different blade lengths, the pitch and width both being maximum in the region beyond the half blade length from the axis, and both diminishing therefrom toward either extremity of the blade.

"4. The method of constructing laminated propellers, which consists in shaping the several laminations to the plan form they are finally to have, putting holes in the laminations in such positions that they will register when the laminations are finally to have, putting in the laminations in such positions are properly assembled, assembling the laminations together with glue or cement between, and securing each to the next by screws inserted in the registering holes until the glue or cement has set, reaming the holes, and inserting dowels therein with glue.

ATWOOD JOINS CLAYTON AND CRAIG

Boston, Mass., November 23.—Harry N. Atwood, the Roxbury cross-country flier, has severed his connection with the Burgess Co. and Curtis of Marblehead, and has become supervisor of the Clayton & Craig Aviation School of this city. This announcement was made this evening, when Atwood gave an address on his recent record-breaking flight from St. Louis, Mo., to New York, before an audience of 150 in the school building at 15 Harcourt street.

Atwood outlined the plans of the school, which is to be divided into three sections, aeroplane construction, gas engines, and practical flying. Negotiations are now pending for the purchase or lease of a large tract of land on the marshes between this city and Lynn, where the school intends to establish its aerodrome. Atwood stated that in his teaching he would use a Burgess model F biplane, and that it was probable that a well-known Curtiss aviator would be secured to teach the operation of this type of machine.

NAVY GETS SECOND BURGESS HYDRO

Marblehead, Mass., November 22.—The Burgess Company and Curtis today delivered a hydroaeroplane to Lieut. John Rodgers, U. S. N., at Newport, R. I. This is the second Burgess machine purchased by the Government, Lieut. T. D. Milling, of the Army Aviation corps, now using the Burgess model F biplane purchased some months ago.

Lieut. Rodgers was here on Monday, and made several successful flights in a 25-mile wind. He flew at a low altitude and expressed himself as greatly pleased with the action of the hydroplanes.

The machine was towed to Newport by W. Starling Burgess of the company in his automobile, and Rodgers next week will make several flights on the waters of Newport Bay.

W. Starling Burgess, Howard Gill, Phillips W. Page and Clifford Webster are making daily flights, and Manager F. H. Russell, of the company, states that they are bending their energies to the manufacture of the hydroaeroplane to supply the insistent demand.

A Burgess hydroaeroplane will take part in the maneuvers of the Atlantic squadron of the Navy attached to the battleship Ohio. It will have two special torpedo boats as convoys, and Lieut. John Rodgers and W. Starling Burgess will operate it. The Burgess Company expects to keep all four of its aviators busy during the coming winter.

FOREIGNERS SEEK CURTISS HYDRO

New York, N. Y., November 24.—It appears that the foreign governments are taking a great interest in the Curtiss hydroaeroplane. Letters have been received during the past two weeks from a prominent official of the Royal Aero Club, and from one of the largest aeroplane companies in France. The British naval authorities seem to be considering an order very seriously, while the French company is anxious for the European agency of the Curtiss machine.

E. PERCY NOEL, Founder-Editor

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The Editor is pleased to consider MS and photographs for publication, but only material that is likely to prove of interest to the readers of Aero. The Editor cannot undertake to answer technical inquiries except in the columns of Aero.

THE GOVERNMENT'S PART

The fact that Italy has obtained the services of practically every European pilot-aviator available for the work, buying aeroplanes for them and hastening with all speed to the scene of war, and the reliable reports already received of the fine work done with a very few machines and men, is proof enough to the lay mind that there is no question about the practical value of the aeroplane to governments.

It may be because France has more need of them—possibly because the individual votes of her national legislators are secret—but that nation has already taken such a lead in providing an Army corp of bird-men that it will be a great many years before any other country will be able to compete with her.

In spite of this, French aviation enthusiasts are calling for more soldier-aviators. Fifty or sixty are not enough. One thousand aeroplanes is the cry now. With such an equipment, it is argued that four or five powerful fleets of aeroplanes could be always in readiness for warfare.

Naturally Americans would like to see the United States as well provided with aeroplane equipment as any other country, and one cannot be sure that "the next day or the next year" there will not be need of all the war machines and war men obtainable; but the geographical situation of our country does not make necessary the protection that the situation of France does.

If France equips its aero army with 1,000 aeroplanes, some of the first machines delivered will be out of date before the last of the lot are in the air, and in a few years they will all be lacking in modern improvements. The army would gain, of course, a great many practical airmen, but as their period of army service expired many would pass into civil life.

So we do not argue for a large aeroplane equipment in the United States Army and Navy now. In order to keep in touch with progress, to learn as much about the utility of the aeroplane for land and water work, the two departments should have at least a total of 100 instead of less than a score.

But what the United States Army and Navy can do which will benefit aviation and the nation, is to offer generous sums regularly for several machines which can pass a prescribed series of tests. Let the Army and Navy commanders state what an aeroplane should be able to do in order to be valuable; then lay down rules so strictly that there will be no evasion, and offer generous prizes for the aeroplanes that fulfill the qualifications. An offer of this kind every year would do more to foster aviation progress than all the prizes ever offered for races, contests and hazardous tricks.

Write to your representative in Congress about it.

A daily paper, in commenting on some recent flights, said, "M—— handled his machine with the ease of a Brookins." Who were those fellows named Wilbur and Orville somebody? Didn't they have something to do with the immortal Walter at some time or other?

♦ ♦ ♦

A Milwaukee inventor has secured a patent that apparently covers everything that the famous "stability by manual means" clause misses, but we advise him not to attempt to enforce his claims. Judging from the history of the Selden patent case and similar efforts at justice, it will take about 40 years and 6,481 volumes of evidence before the thing is decided.

AVIATOR AND BUILDER

GEORGE BLANKENHORN AT VALLEJO, CALIFORNIA

A peculiar report was received last week about a boy in California who is said to have attempted to steal a ride in an aeroplane, with a sudden fall as the result. The truth of this story is as follows: George Blankenhorn, a navy yard mechanic was in Vallejo, Cal., Saturday, November 4, assisting Paul Butler, the builder of a Curtiss-type aeroplane, in a series of test flights. After Blankenhorn had made a number of straightaway flights, he took the machine out, attempted to fly a circle, and was pilled up when one of the wings touched on a sharp bank. He said afterward that the machine slipped to one side because of a broken control wire. Blankenhorn was not hurt, although the machine was smashed. The machine, by the way, seems to have been a hoodoo of some sort all the time, as Rupert Coombs, who is a half-owner of the biplane with Butler, lost his hand in cranking the propeller not long ago.

Mrs. Eugene Ely, widow of the late flier, has taken up her residence with her parents at Corte Madera, Marion County, Cal., with the intention of staying there permanently.

On Saturday evening, November 18, S. S. Jerwan, pilot, Aero Club of America, gave the first of a series of lectures on aviation at the Twenty-third street branch of the Y. M. C. A., 215 West Twenty-third street New York, where he spoke before a large and appreciative audience. He took for his subject, "Practical Aviation."

Capt. Hugh L. Willoughby has ordered a six-cylinder Kirkham motor shipped to his home at Sewall's Point, Fla., to be installed in his hydroaeroplane, the "Pelican." Other Kirkham motors have been delivered during the past month to the Chicago Aeroplane Manufacturing Company and to Aviator J. V. Martin.

Roscoe Timson, of Lynn, Mass., has models of a flying machine which are reported to soar perfectly without motive power of any kind. He believes he has discovered the true principle of soaring flight, and is now engaged, with several experienced mechanics, in building a full-sized flyer. It is further reported that Lee Hammond is interested in the work.

Ralph Ross and Clifford Prodder, both of Mandan, N. D., are about to enter the Curtiss school at Los Angeles. It is reported that they left home last week with this purpose.



THE DIARY OF FLIGHT

TUESDAY, NOVEMBER 14.

Marblehead, Mass. Frank Coffyn flew in a Burgess hydro-aeroplane for the first time. He was out 10 minutes. G. S. Curtis received his first lesson on the hydro-aeroplane with C. L. Webster as instructor. W. S. Burgess carried H. A. Hawthorne as a passenger.

Houston, Texas.—C. F. Walsh, Beckwith Havens and Eugene Godet flew.

WEDNESDAY, NOVEMBER 15.

Houston, Texas.—C. F. Walsh, Eugene Godet and Beckwith Havens flew.

THURSDAY, NOVEMBER 16.

Houston, Texas.—C. F. Walsh, Beckwith Havens and Eugene Godet flew.

Atlanta, Ga.—Lincoln Beachey and C. C. Witmer flew, carrying mail.

FRIDAY, NOVEMBER 17.

Houston, Texas.—C. F. Walsh, Beckwith Havens and Eugene Godet flew.

Atlanta, Ga.—Lincoln Beachey and C. C. Witmer flew. They took part in mock military maneuvers.

SATURDAY, NOVEMBER 18.

Houston, Texas.—C. F. Walsh, Beckwith Havens and Eugene Godet flew.

Vicksburg, Miss.—J. C. Mars flew near the Mississippi river, attaining at times, an altitude of 2,500 feet.

Memphis, Tenn. Louis Mitchell flew 11 minutes carrying Miss Margherite Champion as passenger. It was directly after sunset and Mitchell went high enough to see the sun which was invisible on earth.

Atlanta, Ga.—Lincoln Beachey and C. C. Witmer flew.

SUNDAY, NOVEMBER 19.

San Diego, Cal.—William H. Huff, of San Francisco, and S. C. Lewis, of Illinois, each made flights during which they attained an altitude of 2,000 feet. They were trained in the Curtiss school.

Houston, Texas.—Charles F. Walsh flew. At the end of a 45-minute flight over the city his gasoline gave out and he was compelled to spiral down 5,000 feet to the park. Beckwith Havens and Eugene Godet flew.

Elmhurst, Cal.—Weldon B. Cook made several flights carrying passengers.

San Francisco, Cal.—Roy Francis, a graduate of the Gage School, carried a passenger in a Hall-Scott motored Gage biplane. He was out seven minutes.

MONDAY, NOVEMBER 20.

Marblehead, Mass.—Lieut. John Rodgers of the U. S. Navy made a 20 minute flight in the Burgess-Wright hydro-aeroplane, purchased by the Navy department.

TUESDAY, NOVEMBER 21.

Marblehead, Mass.—Kaid Belton, while flying at the Pullman aviation field, descended from a height of 400 feet on a glide and wrecked his plane when one wheel of his machine struck a hole in the ground. He was uninjured.

Austin, Texas.—C. F. Walsh flew.

Kinloch, Mo.—H. F. Kearney and Antony Jannus flew a race to the Stanislaus seminary, some five miles north of the grounds. Jannus won in nine minutes 10 seconds, while Kearney took nine minutes 32 seconds to accomplish the flight.

WEDNESDAY, NOVEMBER 22.

Austin, Texas.—C. F. Walsh flew three times.

Kinloch, Mo.—H. F. Kearney and Antony Jannus flew.

THURSDAY, NOVEMBER 23.

Kinloch, Mo.—H. F. Kearney and Antony Jannus flew.

FRIDAY, NOVEMBER 24.

Kinloch, Mo.—H. F. Kearney and Antony Jannus flew.

SATURDAY, NOVEMBER 25.

Rome, Ga.—C. F. Walsh flew three times.

St. Louis, Mo.—H. F. Kearney flew from Kinloch field to Alton, Ill., a distance of about 15 miles. He started at 3:15 and reached Alton at 3:30. Antony Jannus flew five minutes in an attempt to start, after a 22-minute flight in the morning.

SUNDAY, NOVEMBER 26.

Alton, Ill.—H. F. Kearney flew over the city for 40 minutes, circling the court house dome three times.

Aero Club of Saint Louis

Temporary Office: 19 South Broadway, St. Louis.

E. Percy Noel, Secretary.

BOARD OF GOVERNORS

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BULLETIN

Members of the Club are requested to remember the Annual Meeting and to attend without fail.

DATE: December First. PLACE: Automobile Club Planters Hotel

TIME: 12:30 to 3:00 p. m.

The New Board of Governors will meet the same day, at the same place; Time: 3:15 p. m.

To the Members of the Aero Club of St. Louis:

Attention is again called to the fact that on Monday, December 4, at 4 p. m., a lecture will be given at Washington University, on "Why Aeroplanes Fly," by Prof. George Oscar James, Ph. D. The members of the Aero Club are particularly invited to attend. The lecture takes place in Cupples Hall, room No. 2. The University car takes passengers to the college for one fare.

E. PERCY NOEL, Secretary.

Ae. C. A. TAKES STRONG STAND

New York, November 25.—The governors of the Aero Club of America sent a telegram to Harry N. Atwood this week requesting him not to fly over the Yale-Harvard football game at the Harvard Stadium, and calling his attention to the recent strong stand taken by the club against exhibitions involving danger to the public, specifically forbidding flights above public assemblies or cities. The telegram was hardly needed, however, for Atwood had given up the plan when he received it. The following is an extract from the minutes of the meeting at which Atwood's proposed flight was discussed:

Whereas, It has come to the notice of the board of governors of the Aero Club of America, that the practice of flying over spectators and contestants in athletic sports and games is becoming prevalent among aviators, and

Whereas, Such flying unnecessarily endangers human life; Be it therefore resolved, That all aviators licensed by the Aero Club of America be and are hereby forbidden to fly over or in the close vicinity of spectators or contestants in games or sports other than licensed aviation meets or exhibitions in which the flying is governed by the rules for the meet or exhibition, and

Be it further resolved, That the contest committee be and is hereby instructed to take cognizance of any violation of the above inhibition and apply such one of the penalties set forth in Article 63 of the Regulations of the International Aeronautical Federation, as it may deem expedient.

Clare Camburn, of Tecumseh, Mich., has built a 28-foot glider with a new type of alleron. The machine has behaved nicely in its trial flights. Camburn was aided in the work by his brother.

CORRESPONDENCE

General Information

To the Editor of AERO:

Will you kindly answer the following questions in the next issue of AERO: (1) Can an amateur build an aeroplane along the usual lines and use the same for exhibition purposes without becoming liable for infringement of patented ideas? (2) How about selling it?

(3) In view of the fact that aeroplanes commonly fly with passengers or without, I assume that if the angle of incidence, chord, camber, etc., is good, it does not matter greatly if the spread of planes or the sustaining surface is considerably in excess of what is necessary to lift its normal weight. Am I correct? (4) I infer that the length of fuselage or the distance of rudders from the main planes may be arranged somewhat arbitrarily, depending upon the length of sticks obtainable, and with due regard to a reasonable minimum, the distance would be immaterial as long as the rudder surfaces were sufficiently increased in proportion as the distance shortened. Is this correct, especially in reference to a type having no lifting tail plane? (5) Do you think a distance of say nine feet between the trailing edge of main plane and leading edge of tail rudders sufficient for a plane of ordinary weight and spread of wings?

(6) Is it necessary to have an aviator's license for giving exhibition flights or only for contests or exhibitions where other machines are entered?

E. H. YOUNG.

(1) The question you ask is one for the courts to decide. There have been numerous United States patents allowed covering aeroplane construction—about 4,000, we believe—and it is possible that many aeroplanes infringe on the rights of the patentees, but not one of these patents has ever been adjudicated. This is due to the fact that a United States patent amounts to nothing more or less than a registry for reference in court when the patentee desires to press a claim for prior invention and rights. (2) The same applies to the sale of an aeroplane.

(3) In proper proportion to the increase in supporting surface it will be necessary to increase the active power. (4) The effect of the distance of the tail or empennage from the main planes is primarily important in its bearing upon the longitudinal stability of the apparatus, as it will determine the center of pressure. Various theories are advanced from time to time to determine the most suitable position. In carrying out an original idea in this connection care must be taken to allow leeway for balancing the machine so that it will assume the proper flying angle. (5) Nine feet is a fair average measurement.

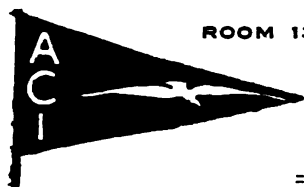
(6) It is not necessary to have a pilot-aviator's certificate in order to give exhibitions, but no flier should attempt to give exhibitions who has not, at least for his own satisfaction, gone through the prescribed test. He should also have considerable practice in gliding from several hundred feet altitude with the motor stopped. At any real aviation meet, the organizers will not accept entries from unlicensed aviators.



WHITE GETS LIBERTY PRIZE

Rome, Italy, November 26.—The Federation Internationale Aeronautique has awarded the Statue of Liberty prize, one of the large awards of the Belmont Park meet held in October, 1910, to Claude Grahame-White. It will be remembered that Grahame-White completed the course about the statue before any other aviator, but that he was disqualified because of fouling a pylon and the prize was awarded to John B. Moisant. When Grahame-White protested this, Count Jacques de Lesseps received it. But it now appears that there is doubt of White's having fouled the pylon, so the decision has been reversed.

THE AERO CLUB OF ILLINOIS



OFFICE
ROOM 130, THE AUDITORIUM
CHICAGO

FLYING FIELD
FIFTY-SECOND AVE. AND
TWENTY-SECOND ST.

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BULLETIN

To the Members of the Club:

The first and most important meeting of the special series called by the club for this winter will be held on Tuesday evening, December 5, at the Auditorium Hotel, parlor floor, and open to members of the Aero Club of Illinois only. Do not forget that at this preliminary meeting the general policy of the club and the campaign of activities for the coming season will be open for discussion, and each member's attendance, or communication if he is non-resident, will surely be an indication of his interest in aviation at large and its local development particularly.

The general policy will be constructive and quite broad, only limited in detail according to the judgment of the club members and the directors. Do not forget that the suggestions of each member made at this meeting will be given serious attention and perhaps may result in making very material strides towards the perfection of the organization and consummation of the results which we so desire.

GROVER F. SEXTON,
Secretary.

To Build Giant Aeroplane Hangar

Chicago, November 25.—“We shall expect to start work on a monster hangar, capable of housing the largest aeroplane, following the completion of our fourth group of hangars,” said Consulting Engineer James S. Stephens, of the Aero Club of Illinois this week past, in speaking of the prospective and present developments at the Cicero Field. Men have started work on a new set of three hangars, extending the long line of buildings on the club field to immense length, fully equaling that on the Lake Front at the recent International meet. In fact, the expensive and very stable construction which caused such universally favorable comment at that time has been transferred bodily to the West Side grounds, and is being incorporated in the general architectural and engineering plans for the most completely equipped flying field in the world.

The capacity of the structures is indicated by their dimensions; the four sets of hangars being each 120 feet broad and 65 feet deep approximately, with roofs high enough to accommodate all hitherto standard designs of aeroplanes, a total of over 30,000 square feet on ground level, capable of holding two or three dozen machines.

“We want clear head room of at least 18 feet for our tandem quadraplane, which has 800 square feet surface,” was the statement of James B. Lund, engineer, at a meeting of the Aeronautical League in the Aero Club of Illinois headquarters last evening. The space requirements of such machines, of which there are several to be tried at the Cicero field in the next few months, have caused the club to seriously consider erecting a suitable housing, which will be placed at

the disposal of club members as soon as the arrangements can be carried through. An illustration of Messrs. Lund & Dwight's aeroplane will be shown here soon.

Equipment for Experimentation

Chicago, November 25.—It is entirely within the range of the Aero Club of Illinois' policy, a development of the vigorous methods so largely responsible for growth in Chicago and so favorably considered by progressive interests everywhere, to offer the best facilities practicable in its club room, lectures and scientific discussions, flying field, hangars, testing equipment and contests, with the object of augmenting and accelerating the growth of aeronautics as a science, industry and sport.

To that end it will be well to devote a certain amount of space to acquainting those interested with the various departments of activity and their prospects, of which the heading of this small article indicates, one of the most important at this stage.

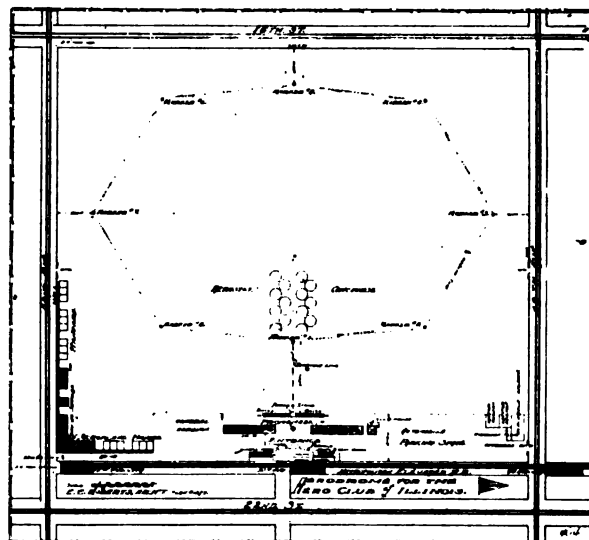
In line with the general scheme laid out at the Aero-technical Institute, Paris, it is contemplated to run full sized dynamic tests of lifting surfaces of the many standard forms and probably the several special and new shapes. This will require a suitable railway or other tractive, carrying and recording equipment, and which are among the resources to which the club is situated to have access.

Motors may be tested for power, and the various efficiencies in accordance with approved laboratory methods. There have already been several original and noteworthy developments of internal combustion engines in this vicinity and more are expected. Propellers and tractors have during the past season seen considerable improvement in the hands of local constructors, even to a phenomenal degree in one or two cases, so that much may be anticipated of the successes of the coming year.

Shops for smaller experimental work and detail construction are already being arranged for. Complete facilities for repairs are to be offered.

One of the most interesting parts of the equipment of an aerodrome is that applying to balloons, either spherical or dirigible, and it may be of value to note that immense gas producers are in the immediate neighborhood of the field. Furthermore, an equipment of both gas and hot-air balloons is now in prospect with the attendant possibilities of contests attracting the customary popular interest. More definite statements in this regard are to be expected in the near future.

From time to time more detailed descriptions of the devices and apparatus mentioned above will probably appear on these pages, properly illustrated, and attention is directed at this time to the accompanying plan showing the Cicero Flying field of the Aero Club of Illinois.



THE AERODROME AT CICERO

Model Aeroplanes

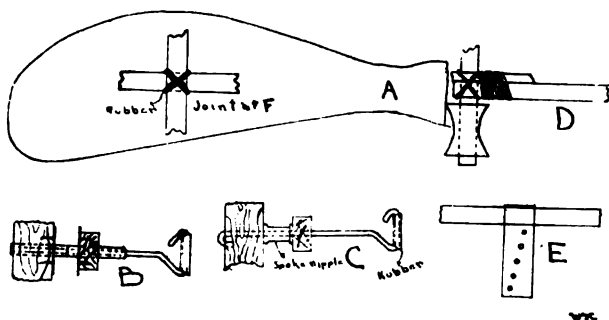
Constructors, designers and fliers of model aeroplanes throughout America are invited to write to the EDITOR of the MODEL AEROPLANE DEPARTMENT, stating their views upon the organization of a national association to govern model contests and promote this important branch of aviation.

BUILDING A MODEL HYDROAEROPLANE

By Waldo G. Clegg.

During the past year model aeroplaning has grown very popular in this country, especially with the boys. In England all the records are held by grown men. Not content with building models that can be started from the hand, actual fliers are constructed which rise from or alight on land and water.

Of these, particular attention attaches itself now to the model hydroaeroplane. It is not a simple matter to construct a successful model of this kind, and the task should not be attempted by the novice builder. If the pontoon construction is discarded and landing gear used instead, the model here-



with illustrated will be comparatively simple to make. This can be done by following the dotted lines in the illustration of the side view of the model.

A prominent factor in the list of material is birch. This wood, though a little heavier than spruce or bamboo, is much stronger than either and presents a neater appearance than bamboo. For skids and curved wing tips it is unexcelled.

Now to the actual construction: The main planes are each made up of two main spars, $\frac{1}{4}$ inch by $\frac{1}{4}$ inch birch. The curved tips are of the same size birchwood, shaped by steaming. The rib may be of spruce or poplar, $\frac{1}{4}$ inch square. They should be steamed to a one in twelve camber. In order to give the proper angle of incidence, they are lashed with carpet thread to the top of the front spar and the bottom of the rear one. The joints should be coated with a thin glue. The struts are 3-16-inch dowel-lashed to the main spars.

Before covering the planes, be sure to round the edges of all the woodwork by sand-papering. The forward plane is constructed in much the same manner as the rear one,

excepting it has no curved tips. It should be made adjustable as shown at E. The covering of the plane may be silk or percaline. It can be sewn on all around or glued to edges and sewn to the ribs. If silk is used it should be varnished, but the percaline should be proofed by two coats of a solution formed by dissolving one-third of a cake of paraffine in one pint of benzine.

The motor base is constructed entirely on one-fourth-inch dowel sticks, except the rear piece, which is silver spruce, one-fourth by one-half inch, to receive the propeller bearing. All joints are tied and glued to give additional strength. A bridge truss may be added, made of rattan. The semi-circular buffer on the front end will enable the model to negotiate bad headers successfully. It is made of two pieces of 3-16-inch rattan bound together.

The propellers may be made of poplar or mahogany. They may be procured cheaply in blank form from the supply houses, but the shape of a good propeller is shown at A for those who wish to make their own.

Great care should be taken in cutting and polishing them that they may give equal thrusts, else the model will fly in circles. The best bearing to use on these propellers is shown at B, but an ordinary wire, as at C, may be used. These propellers will each require about seven double strands of 2-32-inch square elastic. To keep the elastic from cutting, slip a piece of rubber tubing over the hook, as at C, and turn the elastic around the spool at the opposite end, as at D.

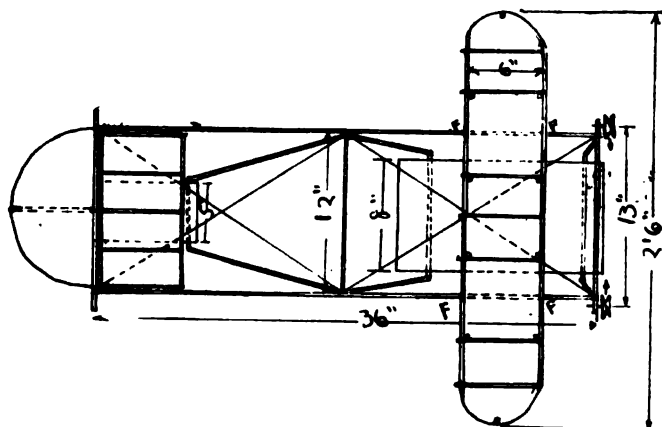
Now comes the most important part, pontoons. After extensive experiments I have found that a pontoon covered with varnished silk is the most suitable.

The edge pieces, which give it shape, are 1-16-inch white wood. They are held apart by several $\frac{1}{4}$ -inch sticks. The silk is stretched on and glued in place, after which it is given two coats of varnish. The shape shown in the drawing is that adopted by Curtiss, and is positively the best for quick rising. The pontoons are each attached to the frame by four bracers of $\frac{1}{4}$ by $\frac{1}{4}$ -inch birch.

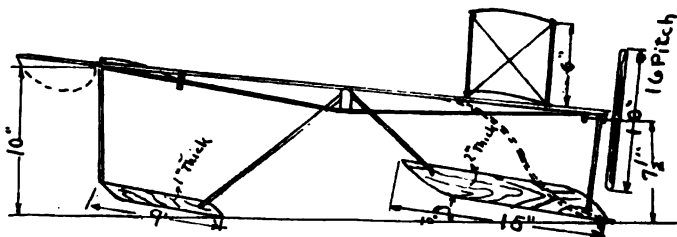
If the ground landing gear is used, the skids should be made of birch, and the blinkers added to keep the machine straight into the wind.

When the model is finished, take it to a nearby pond whose banks are free from trees, wind the propellers about 500 times apiece, being sure to give each exactly the same number of revolutions, release both at the same moment, and give the machine a slight shove forward.

If carefully constructed according to the directions it will skim along the surface about 20 feet, rise into the air, and fly a considerable distance before alighting. Then comes the thrill of joy when you realize your time has been well spent.



PLAN VIEW



SIDE ELEVATION

It is reported that C. H. Toliver received orders from the Health Commissioner of San Diego, Cal., where he has been building his dirigible, to the effect that the large amount of explosive gas in the aerostat endangered the lives of the citizens, and that his ship must be removed immediately. Toliver has set to work to build a small gas bag with which to tow the big one out of the city limits.

POLITICS EFFECT ATTENDANCE IN MEXICO

Mexico City, November 22.—The Moisant aviators and others provided a good entertainment for a small crowd at Valbuena field, the seventh of their engagement here. The meet has been very successful, so far, from an aviator's point of view, because of the number of flights made in such a rare atmosphere; but the attendance has not been good. About 1,000 people were out the first few days of the exhibition, but since Monday the average has sunk to less than 500. The confused political situation here may have something to do with this.

On Thursday, November 16, the meet opened at five o'clock in the afternoon. C. F. Willard and Andre Houpert had made trials before this, but were apparently having trouble with the thin air. Miss Matilde Moisant opened the meet by a six-minute flight at the hour named, and she was followed by George Dyott at 5:15. Miss Harriet Quimby arose at 5:17 and thus, with the exhibition barely 15 minutes old, the Mexicans saw two machines up at once. It was not for long, however, as both Dyott and Miss Quimby descended after about five minutes in the air. Then Willard took out his biplane and made a circle at the end of which the crowd suddenly broke through the ropes and ran out on the field, apparently with no other object than to examine the machines. It put an end to the flying.

On Friday, November 17, a gusty day, George Dyott was the only man to fly, when he took his machine out for a short turn at 5:25 in the afternoon. A crowd of 900 was disappointed, but the management announced that the day's tickets would be good at any time later in the exhibition and the grumbling ceased. Miss Harriet Quimby was the star on November 18, when she made a 37-minute flight over Lake Xochimilco and the Hill of the Star. Andre Houpert also flew well on a 15-minute jaunt over the city, during which he circled Chapultepec. George Dyott was up 22 minutes during Miss Quimby's flight and they engaged in a race to the Estrella (Hill of the Star). At about five o'clock Dyott made two more flights, carrying Captain Patrick Hamilton as passenger on the first and A. Pinally Casas, a local bull fighter, on the second. Miss Moisant also flew, late in the afternoon.

On Sunday, November 19, Miss Moisant stepped into the limelight with a long flight over Lake Xochimilco, and an exhibition flight of fair duration. Andre Houpert opened the flying at 3:30 with a six-minute whirl over the field. Then Miss Moisant made her first flight of the day. Dyott brought out his monoplane at 4:24, made a three-minute flight, started up again with a mechanic, as a passenger, came to earth in a field nearby and left the mechanic to walk back while he went out again, this time to remain in the air until 4:53. Houpert flew over to see what had happened, when he was seen to bring his plane down in the field, returning almost immediately. Miss Moisant made her long flight over the lake, to be followed in quick succession by Dyott and Houpert on short flights. Dyott made the last flight of the day at 5:30.

On Monday the weather was bad, and only three flights were made, the day ending at 4:30. Yesterday, Tuesday, Miss Moisant made another long flight, beginning at five o'clock, during which she attained an altitude of 2,500 feet and traveled over the crater of the extinct volcano, Ajusco. She also opened the day. Miss Quimby made the second flight of the afternoon and was followed by Houpert and Dyott on exhibition flights. Miss Moisant's long flight was the last of the day.

Today, November 22, George Dyott and Miss Quimby each made one flight. Dyott ended his with a fancy dive somewhat startling, even to nerves accustomed to watching a bull fight. Miss Quimby's flight lasted 19 minutes, and she traveled over the lake during the best part of the time. Alberto Branif, the local aviator, had his Farman biplane out, but the machine refused to lift, so that his work was confined to mowing the grass.

FLIERS ARE BUSY AT PRESIDIO

Presidio of San Francisco, November 19.—Roy Francis made a seven-minute flight at Cavalry Flat today, carrying I. R. Gates as a passenger in his Gage biplane. Francis, who is a graduate of the Gage Aviation School, at Los Angeles, is planning to make a flight at San Jose within the next 10 days. Gates and Criblett are busily engaged in mounting a Max-

imotor in the Green biplane, which Gates recently purchased and expects to be able to make trial flights soon. Criblett has announced that he will not repair the machine wrecked by Sergeant Seely in his recent disastrous flight, but will purchase another at an early date. Sergeant Seeley is still confined to the General Hospital by his injuries.

At Elmhurst, Cal., November 19, Weldon B. Cook again demonstrated his progress as an aviator, when he made several flights, carrying passengers on each trip. His brother, Robert L. Cook, and Arthur Knapp were among those who enjoyed their first ride in the air. Cook is planning to fly from here to Stockton in the near future, and will soon give an exhibition flight in that city. Lantieri and Maupin, owners and builders of the Curtiss-type biplane, operated by Cook, are considering putting the aviator on the road in the near future.

RUBEL SCHOOL TO OPEN SOON

Louisville, Ky., November 24.—Answering the general call for aviation schools, the R. O. Rubel Company intends to establish one here, with Frederick Morlan in charge. Grounds have already been leased, two and one-half miles from the city on the interurban car line, and three biplanes have been provided for the pupils. The machines are equipped with a Hall-Scott eight-cylinder, a model two Maximotor and a Gray Eagle. There will also be three monoplanes, one Bleriot-type, one imported Demoiselle and one American-made Demoiselle. A hydroaeroplane is partly constructed for use on the Ohio river, and to make the field equipment complete, a wind wagon has been provided.

The school has already enrolled seven pupils, who will board on the grounds. The school does not open until December 1, but everything is now in readiness, and provision has been made for several more pupils at the field, for quite a large camp will be formed if present indications hold good. The R. O. Rubel Company yesterday received an order from W. O. Huff and H. G. Maris of Columbus, O., for a two-propeller biplane to be delivered within 60 days. This is considered rather an encouraging sign so early in the winter.

TO ISSUE SPECIAL AVIATOR'S BREVET

London, November 4.—The Royal Aero Club of the United Kingdom will, under the rules of the Federation Aeronautique Internationale, grant special certificates to licensed pilot aviators who, provided their names be entered on the competitor's register of the club, pass the following test:

1. A cross-country flight, out and back, around a point situated at least 50 miles from the start. The turning point will be selected by the Royal Aero Club and will not be indicated to the candidate until one hour before the starting time selected by the candidate. This flight shall be completed within three hours of the selected starting time.

2. Separate flight of at least 1,000 feet rise, which shall be verified by recording barograph, sealed by the observers prior to the start.

3. To glide from a height of at least 500 feet above the ground to earth, with engine completely cut off, and alight under normal conditions within 100 yards from the starting point. This glide, at the candidate's option, may be the conclusion of Test 2.

BANKER'S SON TURNS AVIATOR

New York, November 25.—Jesse Seligman, son of Albert I. Seligman, bankers and brokers, and a nephew of I. N. Seligman and Henry Seligman, of J. & W. Seligman & Co., bankers, has become a professional aviator for the love of the sport and will sail shortly for the West Indies to give exhibition flights. Seligman, who is a pupil of Andre Houpert, of the Moisant Aviation School, has been flying now for three months. He obtained his license in September. Seligman will go first to San Juan, Porto Rico, and having filled his contract to fly there and at various other places on the island, will go to Panama, where he hopes to be the first man to fly from the Atlantic to the Pacific, following the canal. Seligman will use a Moisant-Bleriot, fitted with a 50-horsepower Gnome.

Young Seligman's record at the flying school is considered unusual. He outstripped all the other students in his tests for a license, going up in a 15-mile wind, and cutting the figure eights like a veteran. This was after only five weeks of instruction.

AERO MART

These Notices Bring Results

ALL WANTS 1c A FOR SALE and 2c A
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If desired, replies may be received at the offices of the Aero Publication Company. Advertisers wishing to take advantage of this convenience will pay 10 cents extra for registration, to cover the cost of forwarding replies.

SITUATIONS VACANT.

AVIATOR—Wanted, licensed monoplane aviator. Give particulars as to instruction and experience. Box 163, Aero, St. Louis.

SITUATIONS WANTED.

ASSISTANT—What individual or factory will give me a chance to obtain experience with motors and engines, during the winter months, with a possibility to take up aviation next spring? University graduate. Address W. Spalter, 985 Third Ave., New York City.

AVIATOR—Young man desires backing or employment. State full particulars with your proposition. Box 178, care Aero, St. Louis.

AVIATOR—Situation as aviator; one year's experience; can design and build. Box 174, care Aero, St. Louis.

AVIATOR—Experienced Curtiss operator is open for flying position. Box 182, care Aero, St. Louis.

AVIATOR—Young man at present employed as instructor in automobile school wishes position as aviator, mechanic, or aero school instructor. Have wide experience on all makes of autos, motorcycles, and marine motors. Have studied every type of aero motor, control and landing gear for past three years. Cy Tegner, 1551 E. 27th St., Cleveland, Ohio.

HELPER—Young man, 19, wishes to obtain position as helper with some aeroplane concern. Address 1123 Thirteenth Ave., Moline, Ill.

INSTRUCTOR—Aeronautical expert (French) instructor for flying biplanes and monoplanes. At present employed, superintendency, construction and flying, years of experience. Thoroughly capable to take charge manufacturing concern, to teach and construct privately or otherwise, various types aeroplanes, splendid success; best references as to ability, habits, etc.; seeks position of trust. Box 177, care Aero, St. Louis.

MECHANIC—Aero mechanic, six years' experience, best aero references; monoplane and biplane experience. Wish position as aviator mechanic or in shop. Box 172, care Aero, St. Louis.

LICENSED AVIATOR—Licensed aeroplane pilot No. 50, Aero Club of America. Wright biplane winner of prizes at Chicago, Canton and St. Louis meets, wishes to fly for firm or individual in either Wright or Burgess-Wright in exhibition, school and passenger carrying work. References exchanged. Address Box 179, care Aero, St. Louis.

MISCELLANEOUS WANTS.

AVIATOR—Information wanted concerning best method and terms learning. Address J. M., care Aero, St. Louis.

MOEDEBECK HANDBOOK—Wanted, a copy of Moedebeck's Handbook. Will pay \$2.25 for second-hand copy in good condition. Box 200, care Aero, St. Louis, Mo.

MOTOR—Wanted, standard aviation motor suitable for monoplane, not less than 35-horsepower; must be in A1 condition, and demonstration expected. Give full particulars, when purchased, how long in use, etc. Must be cheap for cash. Roberts or Gnome preferred. Address International Aeronautic Construction Co., Jamaica, New York City.

PROPELLER—Chauviere or Normale wanted. Box 181, care Aero, St. Louis.

FOR SALE.

ADVERTISING MACHINE—For sale, U. S. patent automatic advertising electric machine, very large daily profit, with small investment of money. J. Brandieri, 111 Garfield place, Cincinnati, Ohio.

AIRCRAFT SUPPLIES—Aeroplanes for sale and built to order; propellers, models and model stock; Chicago engines; flying models. Chicago Aero Works, H. S. Renton, Prop., 164 N. Wabash Ave., Chicago, Ill.

AIRSHIP—For sale, complete with silk-bag, motor and tent; \$300 f. o. b. Seattle. H. P. Vidal & Co., New Westminster, B. C.

BLUE PRINTS—Complete 3-foot flying model blue prints for Bleriot, or new Curtiss fan-tail, 35 cents. Full detail and complete blue prints Nieuport \$1.00. Aerodaster Construction Company, 3751 Indiana Avenue, Chicago.

FOR SALE—Biplane 32-foot \$200. 20-foot biplane gliders \$20 and \$30. John Frier, 5833 Julian Ave., St. Louis.

FOR SALE—One 60-horsepower Elbridge Aero Special engine, latest type fitted with Bosch magneto, Harrison radiator and seven-foot Requa-Gibson propeller, all new and guaranteed to be in first-class condition. Original cost \$1,350, price \$675. Reason for selling, buying larger engine. Box 183, care Aero, St. Louis.

FOR SALE—One Detroit 20-30-horsepower Aero motor, with magneto, coil and tank, suitable for Curtiss-type or Bleriot. Motor was used for small monoplane which was smashed. One Farman-type aeroplane with Farman alighting gear. Only reason for selling aeroplane, haven't the capital. First check for \$500 takes all. Photo and particulars. Box 34, Station A., Richmond, Va.

FOR SALE—Two Yale motorcycles, one a 2¼-horsepower, the other a 3¼-horsepower. The 3¼-horsepower is a 1910 machine and is in dandy condition. \$125 takes the 3¼, \$65 takes the 2¼. Also have a two-cylinder opposed water-cooled 20-horsepower motor for \$50. Box 180, care Aero, St. Louis.

GLIDERS—Why not do what others are doing? Purchase one of our Aerodaster biplane gliders at \$25 and get up in the air! Guaranteed to carry 185 pounds in safety. Aerodaster Construction Company 3751 Indiana Avenue, Chicago.

MAKE an aeroplane from your bicycle for \$6. Send 50 cents for blue prints with instructions. Address Hull Monoplane Co., Marshalltown, Iowa.

MONOPLANE—Bleriot-type monoplane ready for power, \$125. Stickney, 2407 Sixth Ave., Moline, Ill.

PROPELLERS—Ash and white wood, five laminations, a true screw propeller for \$15. Aeroplane parts. Vixen Propeller Co., 800 N. Geddes St., Syracuse, N. Y.

MODELS AND MODEL SUPPLIES.

MODEL SUPPLIES—Ball-bearing shafts 30c each; Percy Pierce flyers \$1.50 complete; propellers, knives 50c each. Diehl Bros., Jackson, Mich.

MODEL SUPPLIES—Complete material to build 3-foot Bleriot \$2.75; Antoinette \$4; 40-inch Curtiss \$5. Diehl Bros., Jackson & Rockwell Sts., Jackson, Mich.

When writing to advertisers, please mention AERO, the first weekly.

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HARRY N. ATWOOD

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Address: Clayton & Craig Aviation School, 15 Harcourt St., Boston.

RENE BARRIER(Gnome Driven
Queen Monoplane.)Address: Care Queen Aeroplane Co., 71 Broadway or Fort George
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CHARLES F. WALSH

(Curtiss Biplane.)

Permanent Address: 1737 Broadway, N. Y.

MODELS AND MODEL SUPPLIES—Continued.MODEL SUPPLIES—1-6-inch square rubber 1c per foot; 3-32-
inch 1½c; ½-inch 5c per foot. Six-inch propellers 25c,
additional inches 5c, postpaid. Diehl Bros., Jackson &
Rockwell Sts., Jackson, Mich.MOTOR—How far would a 15" propeller of 15" pitch, running
at 2,000 r. p. m. drive your model in two minutes? Buy
a Cellulose Turbine and see. Help break the world's record.
Others are pleased, why not you? Price now \$3.50 postpaid.
The Co-operative Aero Association, Muncie, Indiana.**FINANCIAL.**PARTNER WANTED—To furnish engine for latest type
30-foot Curtiss aeroplane for one-half interest. Plenty of
good contracts waiting. Weight of machine 375 pounds.
For further particulars address S. C. Moore, 200 Second
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Has proven a success for over two years. E. Fick, 2325
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work a specialty. John O. Selfert, solicitor of American
and foreign patents, designs and trade marks. 500 Fifth
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NOTICE TO ADVERTISERS

Beginning with Volume III., No.
14, the issue of AERO dated Jan.
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pearing in the AERO MART
will be advanced. Schedule of
rates will be published in the next
issue.

Aviation—Your Opportunity

Buy American Aeroplane Mfg. Co. Shares Now, 25 cents per share. Par Value \$1.00. Last Week's Announcement Made in the United States and Canada, Fairly Swamped Us With Orders. The 25 Cents Allotment is Almost Exhausted. We announced Through the Columns of the Aero in the Issue of November 25th, that this Company Would Sell Shares for a Short Time, at 25 Cents Per Share; Par Value \$1.00. The Response to this Announcement from the Readers of Aero, Was Immense.

This Company was organized for the purpose of manufacturing biplanes, monoplanes and every order of serial machines. Already we have manufactured and flown successfully nineteen of our own biplanes.

We are now building a new plane for George M. Ellis, at a price of \$3,000, and this Biplane will be used by Mr. Ellis in his flight from Vancouver to Calgary, Alberta, which flight is to be made under the auspices of the News-Telegram, of Calgary, Alberta, Can. Mr. Ellis will start very soon and will cover the distance, which is 485 miles, in our machine, built entirely in our own factory, with the exception of the motor. During this flight, Mr. Ellis will be compelled to reach an altitude of 9,000 feet to go over the Canadian Rockies.

We have just completed a standard, latest type American Biplane for the Tarnopol Exhibition Company, of Chicago, which Company leaves within a few days for a complete tour of the South. We have entire charge of the booking of this Company, through our Booking Department, and all exhibitions of this Company will be booked by us. We supplied two of our aviators, who graduated from our own School, and we likewise furnished the mechanics and crew, which we selected from among our students.

We have also sold one Curtiss type biplane, with motor equipment complete, to Rider Brothers, Newark, Ohio, who are booking through us and will tour Mexico and Texas.

Not only does this Company intend to manufacture any style aeroplane desired and likewise all parts and accessories to aeroplanes, but we will teach Aviation as well.

Literally thousands of young men and women desire to know more of Aviation. There is a first class opportunity for aviators and expert aeroplane mechanics, and to supply this demand will be the task of our resources and factory.

Here is a real opportunity, in our opinion, to make a successful investment. Remember, you are asked to buy this stock at 25 cents a share now—the par value of the stock is \$1.00. The moment we pay a dividend on this stock, such a dividend is paid upon the par value, or, in other words, we pay you a dividend on \$1.00 whereas you are now only asked to pay 25 cents, and your 25 cent investment must of necessity have an increased value to you of at least 300%, plus the dividends. We fully anticipate that one year from today, the shares of this Company will be far in excess of the par value of this stock, or in other words will be worth more than 100 cents on the dollar—and you can acquire it now at 25 cents.

One of the world's greatest aviators, whose record is scarcely approached by any other aviator today, is Bud Mars. He is General Field Manager,

Consulting Aviation Expert and Vice-President of this Company. Mr. Mars will take charge of our aviators in the making of all exhibits and Open-Air Competition flights. The story of this man's genius and his achievements in the air reads almost like romance.

James C. (Bud) Mars, Vice-Pres.

Bud Mars has exhibited and made successful flights in scores upon scores of American cities, reaching all the way from New York to San Francisco. All you have to do to learn of the proficiency and reputation of this man is to write to any Aero Club in the United States.

Bud Mars, in company with Captain Baldwin, made a tour of the world. He made flights in the Philippines, Japan and in Asia, and on this trip he sold twenty machines, two of them to the Japanese Government. He is, today, without doubt, one of the really few aviators in this country.

Bud Mars is Vice-President of this Company and will direct field operations. Under him, there will be a competent and expert corps of aviators, educated in our own factory, taught to fly by our own methods and in our own field. And the profit derived from making these exhibitions will belong to this Company.

This Company controls its own aviation field, which is located at 118th and Morgan Streets, near West Pullman, Ill., and is one of the best fields in

the United States and positively the best obtainable in the city of Chicago. To gain some idea of the extent of this field, one has only to learn that it takes our fastest machine more than four minutes to complete a circuit of these grounds.

Our factory and Aviation School, at the present time, is located in Chicago, at 2234-38 Cottage Grove Avenue, and extends all the way through the block.

The demand for aeroplanes is tremendous. It is growing larger each and every month. We propose to undersell every other aeroplane on the market, anywhere from \$1,500 to \$2,000, and by this we mean that we will turn out a plane, equal to the \$5,000, \$6,000 and \$7,000 aeroplanes.

Now is the time to acquire some of this Company's stock. The price is only 25 cents per share. The table, which follows, will tell you exactly how to buy this stock. Announcements, similar to that which appeared in Aero, have been made in the United States and Canada, and we contemplate covering the whole country with these announcements.

This Company, today, is actually manufacturing aeroplanes, and every one that we manufacture, we guarantee to fly, and we do fly them on our own fields.

Our Aviation School is the best in the United States, without a question of a doubt, in our opinion, for not only do we teach the theory of Aviation, but if a man so desires he may take our Construction Course, come to Chicago and go to work in our factory. After he knows how to build an aeroplane, we take him to the Flying Ground and teach him how to operate and fly an aeroplane.

No man, in justice to himself, should fail to clip the coupon below and send for this Company's literature. It will teach everything there is to know about this Company and will show you positively that this is one of the best investments that you could make.

To every man, who buys 500 shares of this Company's stock, we will send a complete Home Study Course of Instructions. If you buy 2,000 shares of stock, the Company will enable you not only to build an aeroplane but will teach you how to fly one as well.

This country is positively excited in almost every county, with regard to aeroplanes. There is a great demand for exhibitions of all character, and you have seen, from time to time, in the aeronautical papers, whole pages of advertisements of County Fair Associations, etc., wanting to book aviators for next year. The profit to be derived from filling these contracts by this Company is enormous and we intend to have at least ten crews in the field next summer.

We did not imagine that there were so many people in the United States interested in Aviation.

as our announcements have proven to us. Those, of you who have written to this Company and have not received your receipts for payments, Aviation Books and answers to your letters, will understand that our mail is so heavy that we could not answer all of it and that some of it is, consequently, delayed. However, we have made arrangements to

that there will be a share of this stock for sale at the 25 cent rate within a few days, and to be absolutely certain of acquiring some of this stock, we urge upon you the necessity of telegraphing us at once so as to reserve some of these shares, pending the arrival of your remittance and application.

The first step in assembling our biplane.

increase our office force and, hereafter, all mail will be answered the same day as received.

Do not fail to send in the coupon below and we will send you our great book on aviation, called "Aviation Values," to you at once.

If you want to know about our School, send the coupon entitled "Free Aviation Book." This will tell you all you want to know about our School. If you want information about the Company's stock, send the Information Coupon directly under the School Coupon.

Aviation is destined to become the fastest growing industry in the United States, and this is the first opportunity ever offered the man of ordinary means to participate in the future of Aviation.

We have appointed Arthur W. Grainer & Company, Industrial Stocks and Bonds, as our Financial Agents, and we desire all communications with respect to the School or the shares of this Company,

Henry Bassow, one of our graduates, getting ready for a flight

If you want to buy some of this Company's stock, send in the stock application.

We advise all who read this announcement not to delay to send in their application immediately, together with their remittance. We do not believe

to be addressed to this Corporation. Just use one of the coupons below no letter is necessary.



How to Buy This Stock

Price Now 25 Cents Per Share

\$ 5.00 down and \$2.50 a month for 3 months buys 50 shares
10.00 down and 5.00 a month for 3 months buys 100 "
20.00 down and 10.00 a month for 3 months buys 200 "
100.00 down and 50.00 a month for 3 months buys 1000 "

If you desire to pay cash, you may deduct 5%.

The par value of this stock is \$1.00; capitalization is \$1,000,000; non-assessable and fully paid up.

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and School of Aviation**
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I do not agree to join your classes but I will read thoroughly all literature you send me.

I enclose 4 cents in stamps to help pay postage.

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Address.....

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Complete Monoplane with Gnome power plant	-	-	-	-	from \$6000.00 to \$10000.00
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" " " fully assembled without power plant	-	-	-	-	" 1200.00 " 2000.00
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Carries no baggage but is a traveller just the same.
1000 ft. record, exceeding our former claims by 50 feet.
Send P. O. money order for \$1.00 and get in the game.
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THE PERFECTED RACER

NEW FRENCH MODEL, 36x14 inches.

Record flyer, 950 feet. Wonderfully indestructible. Excellent for
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Charging only reasonable amount, we assume all risk of breakage, and there are no "extras" to run up the cost. The training consists entirely of actual flying in the air with an instructor. Using duplicate levers, the pupil learns to fly instinctively without risk.

Over one thousand flights have been made at our schools this year. While we strongly recommend instruction at our permanently equipped camp at Dayton, training can be secured at New York Aero Club's Aerodrome at Nassau Boulevard, Long Island.

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Complete Monoplane with Gnome power plant	-	-	-	-	-	from \$6000.00 to \$10000.00
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" " fully assembled without power plant	-	-	-	-	-	" 1200.00 " 2000.00
" " knock down without power plant	-	-	-	-	-	" 600.00 " 1000.00

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THE BULLY BLUE RACER!!

Carries no baggage but is a traveller just the same.
1000 ft. record, exceeding our former claims by 50 feet.
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No Dangerous Gyroscopic Force to Upset Your
Machine—Lightest per Horse Power—Starts on
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Spark—Safest and Most Reliable Motor Made

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THE PERFECTED RACER

NEW FRENCH MODEL, 30x14 inches.

Record flyer, 950 feet. Wonderfully indestructible. Excellent for
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FITTED WITH

ANZANI and GNOMES ENGINES
for Single and Passenger Carrying Machines

RANGING FROM

\$3,500.00 to \$7,000.00

The Queen Monoplanes have flown at Chicago, Boston and Nassau Boulevard International Meets, Atlantic City and all over United States.

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The Wright Flyer

Built to carry two people comfortably, and either one can operate the machine.

The standard B machine, used by both the Army and Navy, continues to hold all American Records for American-made Aeroplanes.

Learn to Fly an Aeroplane

Charging only reasonable amount, we assume all risk of breakage, and there are no "extras" to run up the cost. The training consists entirely of actual flying in the air with an instructor. Using duplicate levers, the pupil learns to fly instinctively without risk.

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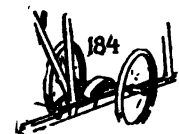
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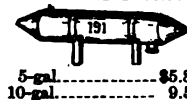
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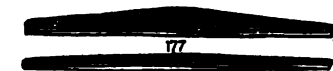
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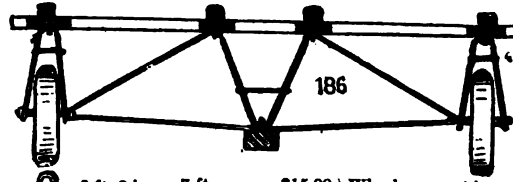
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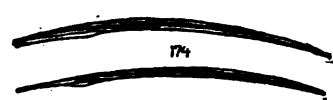
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Edited by E. PERCY NOEL

MINEOLA SEES MUCH WINTER FLYING

Mineola, Long Island, December 2.—Though very little flying has been seen on the joint field of the Aeronautical Society and the Moisant Aviation School, during the week, owing to the cold and high wind, there has been a lot of quiet work going on in the workshops and hangars.

Capt. Tom Baldwin has turned his Red Devil into a passenger-carrying machine. The pilot's seat has been moved a foot or so forward and a second seat placed behind. In order to make room for the passenger the radiator has had to be pushed back about six inches. A footrest has been provided for the passenger.

Since Monday Lee Hammond has taken up half a dozen or so passengers in the transformed biplane.

A military-type control has been fitted to the near-Curtiss biplane of Chambers and Medrick, and next week the machine will be tried out again. Chambers and Medrick are two chauffeurs who built the biplane in their spare time. The plane is fitted with a Kirkham motor, and was successfully flown the first time it was taken out early in the summer. Minor alterations are being made to Frank Boland's wonderful tailless and rudderless biplane. This machine has been the wonder of the experts.

The way Boland steers his craft by the vanes placed between the ends of the main planes, has excited great interest. Boland has an eight-cylinder motor of his own design and construction installed in his abbreviated flyer. Godley is getting on finely with his monoplane, the features of whose wings are an 11-inch warb, an unusually big camber, and particular thick front beams.

Progress, slow but sure, is being made by Carl Strom, the Dane, on his mammoth monoplane. When finished this all-steel aeroplane will undoubtedly be the largest in the world. Designed for passenger-carrying, the wings have a spread of 49 feet, and an 11-foot camber. The machine stands 24 feet high. All the live weight will be carried in a car suspended from the fuselage. It is feared that Strom will have some difficulty finding a power plant big enough to get the machine off the ground. F. Raiche has nearly finished his Curtiss-type machine, which will be fitted with a Smalley motor.

Geo. Clyde, who started out early in the year to put together a biplane along original—very original—lines, saw the error of his ways, and has now a machine built more according to convention. The biplane weighs approximately 1,200 pounds. The upper wing has a spread of 36 feet, and the lower of 28 feet. The curve of the wings is a continuous arc. Control is secured by ailerons, a Baldwin tail and a Farman forward elevator. The motor is a 60-horsepower Hall-

Scott. Capt. Baldwin has made several short flights in the machine for Clyde.

Stanley Y. Beach is having a new and interesting engine fitted to his imported Bleriot. It is one of the double-opposed type and S. Ashmundson, an electrical engineer, is responsible for it. The motor has eight cylinders and is air-cooled. There is a carburetor for every cylinder. In these carburetors there is a wick through which the gasoline is passed. By this contrivance a great economy is expected to be effected in the use of gasoline. The cylinders are 4x4, and on the block the engine is reported to have run for four hours.

Since the departure of Andre Houpert to Mexico with Capt. Hamilton and Geo. Dyott, the two Deperdussin pilots, and Miss Matilde Moisant and Miss Harriet Quimby, Harold Kantner has been in charge of the Moisant Aviation School. Kantner has four pupils, including De Geers, Phil Wilcox, and Alvarez, a Mexican. There are four school monoplanes and one passenger-carrying Bleriot at the school.

On Friday Lee Hammond provided a little excitement. Hammond was making a series of flights for a moving picture concern, the object being to drop a large bomb on a "Turkish encampment." The bomb was a large bag, in which excelsior and sand were the principal composition. Apparently the sudden reduction in weight by dropping the heavy weight at a height of 100 feet caused the aviator to temporarily lose his equilibrium. Anyway, the biplane swooped to the ground and headed for a large crowd of spectators. Luckily Hammond raised his elevator in time, and got over the heads of the people.

WISE WOOD WANTS ALL-AMERICAN TEAM

New York, December 2.—Henry A. Wise Wood, who has charge of the Gordon-Bennett cup committee of the Aero Club of America, is working hard to the end that this country will have a strong team next year to defend the much-coveted trophy which was won for America in England last summer by Charles Terres Weymann. In spite of the fact that the International Aeronautic Federation at its recent meeting in Rome turned down America's proposal that the competitors in the big race should be compelled to pilot machines made exclusively in the country they represent, Wood has hopes that the United States will be in a position to defend the cup with American-made aeroplanes.

As the Aero Club of America is desirous of being recognized as a truly national body, it will welcome all out-of-town bids for the big meet. It is very likely, therefore, that the 1912 cup race will be held in either Chicago, St. Louis, Kansas

City, Indianapolis or some other western city. To attract the best of the foreign flyers, however, there will have to be a really big prize fund. The fulfilling of the conditions for the Gordon-Bennett race, too, will present some difficulties. The race must be held over a three-mile closed circuit, and as next year's racers will probably make from 100 to 110 miles an hour, it will be necessary to provide well-nigh perfect landing facilities.

WILD GOING TO FRENCH SALON

Chicago, Ill., December 4.—Horace B. Wild, on leave of absence as field captain of the Aero Club of Illinois, expects to sail for Europe Saturday night, going straight to Paris, where he will attend the Third International Exposition of Aerial Locomotion, at the Grand Palais, opening December 16. Following this, Wild will tour France and England, remaining away from Chicago for three months. When he returns he expects to have new knowledge and ideas that will help make the Illinois club stronger and better from the practical standpoint.

FARMANS WILL STAY AT HOME

Paris, November 23.—Asked today whether he and his brother, Maurice, would not accept the invitation of the Aero Club of America to exhibit at the Grand Central Palace Aero show in New York next May, Henry Farman said: "Really, we have no need to go to America and show what we are able to do," and Maurice added, "It is certain that we will not exhibit in New York."

Whether this attitude of the brothers Farman is merely some of the aftermath of the woeful experiences of Henry in America during the year 1908, is a matter for conjecture; but he would have it characterize the feelings of all French makers, from what he thinks on the subject.

"To exhibit in New York would involve French makers in considerable expense. It would not be satisfactory merely to take over two machines for the show, for it would be necessary to demonstrate what they could do and do send besides a machine and pilot. Would all this expense be compensated by the real benefits? The American buyer has not been at all favorable to our automobiles, so we do not think he would now favor our aeroplanes. Besides, in view of all that happened to us there, we have the right to be very circumspect. In order to sell there they would, perhaps, force us to have our machines made by an American company, Curtiss or another, and that would not interest us."

CALL MONOPLANE HAS TRIAL

Girard, Kan., November 25.—The Aerial Navigation Company of America has turned to experimenting with a monoplane with the intention of manufacturing flying machines in addition to engines, if the machine appears to be successful. The monoplane had an accident on its first trial, but the makers are more elated over this than depressed, for the machine took its tumble, they think, under conditions where another machine would have been unable to leave the ground.

The machine was taken to the field for its trials, and in order to make sure of its staying on the ground for its trial run it was headed up a hill. The operator was instructed to advance the spark and throttle and see what speed would develop, but it was not intended for him to go into the air. It resulted, to use the words of a witness, "in both surprise

and disaster," for the ship climbed into the air while on the grade and rose to a height of 50 feet. When it was near the top of the hill the operator shut off the power and the monoplane took a header, wrecking the machine but leaving the man uninjured.

Just before the accident, it is said, the engine, driving an 8-foot 6-inch diameter 6-foot pitch propeller, developed an estimated 600-pounds thrust at 1,200 revolutions per minute. A 400-pound dynamometer was strained to the utmost, according to report. It is expected that another machine will be ready in about two weeks, and experiments will be going on with it all winter.

BURGESS FLIERS KEEP BUSY

Marblehead, Mass., December 1.—Phillips W. Page and Clifford L. Webster are making daily flights in the Burgess hydroaeroplane. Last Sunday Webster went up with a moving picture camera, secured five feet to the left of the left-hand seat, but found the balance uncertain, being unable to climb satisfactorily.

The following day Page carried aloft Edward Shaw, a New York moving picture operator in the employ of Israel Ludlow, on two flights. The camera was braced by four guy wires tightened by turn buckles, Shaw turning the crank while Page pointed the lens at the lighthouse, the fort, and other points of interest in the harbor. An altitude of 500 to 700 feet was reached, the first flight taking seven minutes and the second ten.

Page had a ducking on Tuesday, when he took up James Hargreaves of Boston. In making a turn near the water, a wing tip struck, and the hydroaeroplane somersaulted, throwing both occupants out as it fell. They promptly came to the surface and straddled the hydroplanes until picked up by Greely Curtis in a launch, neither being injured in the least.

Greely S. Curtis is making flights with Webster, and is rapidly learning to operate the machine himself. He has invented an attachment to start the motor from the seat, and a first trial is to be given within a few days.

TILLINGHAST MAKES FURTHER CLAIMS

Worcester, Mass., November 27.—Wallace E. Tillinghast of this city, who claims to have made many midnight flights in an aeroplane of his own invention two years ago, today declared that he had discovered the solution of soaring flight, and that a patent covering these principles was applied for April 14, 1910, and granted October 16 last.

Tillinghast claimed, two years ago, that he remained stationary for an hour while several thousand feet over Long Island. He declares that his machine, once in the air, is controlled under nautical principles, the combination of a jigger or staysail with an aileron permitting it to remain stationary in the wind currents. Although this seems completely at variance with the laws of aerodynamics, Tillinghast's friends declare that the Wright experiments were discontinued because of his patent rights.

Aviation circles in New England are divided into two camps, those who believe his claims to be true in part, at least, and those who believe him to be a colossal practical joker. Up to the present time the inventor has refused to make a public flight.

MEXICO'S PRESIDENT RIDES WITH GEORGE DYOTT

Mexico City, Mex., November 30.—George Dyott, driving one of his Deperdussin monoplanes, made a ten-minute flight today, accompanied by Francisco I. Madero, the recently inaugurated president of the Mexican Republic. Madero was much interested in the aviation meet, given by the Moisant International aviators and C. F. Willard, which closed here November 26, and it is said that he is considering the aeroplane's value as a military machine. George Dyott and Capt. Patrick Hamilton have stayed in the city in order to demonstrate the machines to him and to carry out several passenger flights promised during the meet. They will remain here indefinitely.

Last week's account of the meet included the brilliant flying of November 22. On Thursday, November 23, the performance was much better and the small crowd was well rewarded for its journey to the Valbuena Aviation field. Miss Matilde Moisant flew first in a Moisant monoplane, starting at four o'clock and remaining in the air 12 minutes. At 4:18 Miss Harriet Quimby went out for a ten-minute flight, driving her Moisant machine. Miss Moisant and Dyott followed her, with flights of 14 and ten minutes, respectively. Then Alberto Braniff, the local aviator, took out his Farman for a one-minute circle of the field. Miss Quimby went out for a 15-minute flight, and immediately afterward Braniff circled the field twice. Dyott followed with a nine-minute flight and Miss Moisant closed the day with one of four minutes.

On Friday, November 24, four flights were made, two by Miss Moisant, and two by Miss Quimby. The following day brought forth the best flying of the whole week. Miss Moisant opened for the day at 4:15, making a 12-minute flight. While she was in the air George Dyott followed with a two-minute spin, after which Miss Harriet Quimby ascended for a 15 minute flight, and this was the only time during the meet that the two lady fliers were in the air together. Shortly after they had come to earth Dyott made a four-minute flight with Capt. Patrick Hamilton as passenger. Dyott came to earth long enough for Hamilton to climb to the ground and for Gaona, a bull fighter, to take his place in the machine. He then went out for a nine-minute flight. Miss Quimby went out next, adding seven minutes to her flying time for the day. She was followed by Capt. Hamilton, who made three circles of the field in a Moisant and by Alberto Braniff, who made a short flight. There was no flying upon November 26, the last scheduled day of the meet, be-

cause of the strong wind. President Francisco I. Madero visited the field in the afternoon and spent some time in examining and inspecting the machines.

SCHNEIDER PRODUCES NEW BIPLANE

Nassau Boulevard Aerodrome, Long Island, December 2.—This flying field has been as quiet as the grave all week. The only aviator seen in the air was Oliver B. Sherwood, who made his first flight last week. Sherwood is operating A. W. Ridgley's biplane, which is fitted with a Kirkham motor.

Fred Schneider has built another biplane embodying several improvements on his earlier machines. In the first place, Schneider has put the front control in the discard, and in the second, has now double surfaces on his planes. The cellule is built in sections to facilitate "knocking down," and packing for transportation. The machine has the old landing arrangement and controls. Schneider expects to make some flying exhibitions in South Carolina in a month or so. Howard Dietz is still fiddling around with his paraplane. The Hamilton and Hellprin Farman, fitted with a six-cylinder 60-70-horsepower Roberts motor, is finished, and will be tried out in a few days.

LIEUT. RODGERS TESTS BURGESS HYDRO

Newport, R. I., November 24.—Lieut. John Rodgers of the United States Navy aeronautical corps today conducted successful experiments with the Burgess hydroaeroplane delivered to him yesterday by the Burgess Company and Curtis of Marblehead, Mass. He made a 15-minute flight at an average altitude of 300 feet, circled over the vessels of the third and fourth divisions of the North Atlantic fleet, and finally alighted on the water beside the battleship Ohio. The hydroaeroplane was hoisted to the deck of the battleship by the electric cranes, although one of the wings was slightly damaged in the operation. The accident prevented the flight from the vessel's deck originally planned, and the hydroaeroplane was sent back to Marblehead for repairs. Lieut. Rodgers declared he was entirely satisfied with the machine's performance.

TOD SHRIVER KILLED IN PORTO RICO

New York, December 5.—According to advices received by his friends here, Tod Shriver, while flying a Baldwin biplane fitted with Hall-Scott motor, was killed at Ponce, near San Juan, Porto Rico, December 2. The biplane fell 200 feet into a cane field, while making a turn. He died on the way to the hospital.

Shriver left the Baldwin camp at Mineola three weeks ago with George Schmidt, aviator, and Peter McLaughlin, manager. They took with them two Baldwin biplanes for a South American tour. He was using crutches when he left New York.

Mrs. Shriver, who became the aviator's wife three years ago, is in Rochester. Thomas Scott Baldwin, designer and manufacturer of the machine, now in New York, is shocked and there is great grief among the many friends that Shriver had at the Long Island flying fields. "Tod was not foolhardy," said Baldwin. "He was as modest and unassuming an aviator as ever lived."

Shriver was born at Manchester, O., where the funeral will be, 38 years ago. He was a printer's boy until he joined Ringling Brothers' circus. Afterwards he was with Barnum, going around the world several years ago. Following this trip he joined Baldwin in the dirigible balloon business and assisted him at the trials of the U. S. Dirigible No. 1, being present at the Wright biplane trials which followed.

When Curtiss began manufacturing machines Shriver joined him and accompanied him to Rheims for the first international cup race, which Curtiss won. Last year he left Curtiss' employ as a mechanic, built a biplane and learned to fly in three weeks at Mineola.

On September 17, 1910, he obtained his pilot's certificate. He spent last winter in the Orient with Baldwin and Bud Mars and was decorated by the emperor of Japan.

He has had several accidents, twice breaking his leg. The first time was at Wilmington, Del., the last at Batavia, N. Y., six weeks ago.

NEW ROBERTS SHOWS REFINEMENT OF DETAIL

INTAKE SIDE OF THE ROBERTS SIX

The Roberts motors show the result of able design and skillful workmanship. E. W. Roberts, the designer, has slighted no detail in producing a motor that shall have the three essentials for successful flight, great strength, lightness and power. There are two sizes current, the four-cylinder and the six-cylinder, of 50 and 75-horsepower, respectively, both of four-inch bore and five-inch stroke and differing only as required in timing and in the respect that the six uses two carbureters, while the four requires but one. They are of the fixed vertical cylinder type, two-cycle, water-cooled, magneto ignition only, open exhaust, splash oiled and use the Kingston carbureter that has but one possible adjustment, the needle valve. One is impressed with the absence of moving parts outside of the motor and indeed these consist of a few gears only. However, the entire structure must be described, as there is a reason for everything.

With the exception of the steel gears and the steel propeller hub, everything is of magnallium, even to the grease cups. This alloy, known as magnallium, is pure aluminum and magnesium, is lighter than pure aluminum and much stronger. The gears and the spiral advance are of hardened steel. The pump gears are bronze with steel pinions, journaled in bronze bushings. These bushings are pressed into the aluminum pump case and do not show from the outside. The packing gland is of bronze with a very simple slide pin lock for the adjustment.

The gear pump is of ample size and discharges a large flow into a passage cored into the crankcase. From this trough the water passes through each jacket, going from bottom to top without an opportunity for the formation of air pockets or steam heads. The result is a very free circulation, uniform and continuous cooling, and perfect drainage for winter nights. The great length of the jackets is also noteworthy and it may be observed from the carbureter side of the motor, that these jackets are longer than the travel of the piston.

The control of the incoming charge is obtained by the tubular valve which rotates inside of what appears to be the intake manifold. The usual two-cycle method of intake depends upon the piston passing a port, allowing the partial vacuum created in the base to be filled from an ordinary manifold. As the rush of gas was necessarily very rapid carburetion was in jerks and the resulting explosion quite as

erratic. With the tubular valve three things are accomplished; first, the size of the opening and its timing can be regulated, irrespective of the exact position of the piston; in other words advanced, like an intake valve on a four-cycle; second, the charge can be entered at a lower point in the crankcase, thus giving more perfect cylinder wall for the piston to bear on and with better lubrication as a result; third, and very important, is that, owing to the great size of the tubular valve chamber, the gas and air do not get all of the way from the carbureter into the crankcase at each impulse, thus giving an opportunity for better mixture of air and gasoline and better separation of oil and gasoline; then, too, this reservoir is not emptied continuously from the same source, but intermittently from first one direction and then another. Thus the reservoir is to a carburetion system what an air dome is to a hydraulic ram.

An illustration shows the tubular valve of the four-cylinder motor; the four-valve is divided or partitioned in the middle and the six is practically two engines connected together. Such is the flexibility of the motor that adjusting two carbureters is an easy task; one may also run on three cylinders at a time, which is sometimes an advantage in locating trouble or in proving that the motor will not backfire.

To prevent backfiring the by-pass is filled with layers of corrugated metal through which the gas is strained. The design of this cellular by-pass is based upon the well-known fact that an ordinary gas flame cannot be transmitted through a screen, as the radiation reduces the flame below kindling temperature. Another good feature claimed for this cellular by-pass is the further diffusing of the gas and air so that upon its final entry into the cylinder it is thoroughly mixed and best suited for a violent explosion.

Easy starting and reliable throttling are obtained by the spiral advance for the magneto. This device makes a dual system a nuisance and starting is only a question of original mixture and not hotness of spark. The object of the spiral advance is to give as hot a spark from the retarded position as from the advanced position. The spiral accomplishes this by advancing or retarding the armature without altering the relations of the armature to the field or magneto. As a result the temptation to advance the magneto, to make the motor start easier is entirely removed. Likewise the magneto will give a hot spark at slow running speed, making



THE ROTARY VALVE

throttling down merely a matter of carburetion. The new Bosch D U 4 or D U 6 is used entirely on the Roberts.

The pistons, cylinder walls, connecting rods, bearings and crankshaft, all have their respective marks of distinction. The pistons are of a special cast-iron, near-steel, designed to make the best wearing surface for the Aerolite cylinders. Aerolite looks very much like aluminum. Its specific gravity is 2.7 and its tensile strength 38,000 pounds. These figures alone give it great superiority over aluminum, but which, where you add its superlative quality as a bearing surface and its rapid conductivity of heat, makes Aerolite an eye-opener as a cylinder metal.

The connecting rods, beside bearing an excellent example of strong, light I-beam construction, have large bearing surfaces where they are needed and little or none elsewhere. The two-cycle engine always has pressure on the crankshaft, while running, hence the large cap found on the four-cycle connecting rod bearing, is unnecessary. Taking advantage of this knowledge, the Roberts cap is little more than a strap, leaving a great part of the crank pin exposed, all of the time, so that the splashed oil can keep it bathed without special oil ways, scoops or the like. The strap is a bronze bearing piece faced with the same tin-nickel alloy that is used in the upper or service, half of the connecting rod. Both connecting rods and crankshaft bearings are of enormous size.

Although equipped with large crankshaft (2½-inch bearings and connecting rod bearings, the crankshaft is very light for its strength, weighing but 17 pounds) in the four-cylinder motor. This is accomplished by judiciously boring out the shaft and pins and then partitioning to prevent communication between the base compartments.

The base castings are well ribbed. Such a construction is practically inflexible, and when you consider the extra strength and stiffening given by the long steel cylinder bolts, which clamp everything snug, and the heavy cylinder flanges, it is easy to understand why the Roberts is free from vibration. In addition, a one-piece aluminum pipe binds all the cylinders together at the top.

The system of lubrication employed is the infallible one of mixing the oil with the gasoline. All of the steps spoken of as aids to carburetion are aid to oiling. The heat furnished the gasoline, and air in the tubular valve reservoir helps to unite pure gasoline with air, thus leaving the oil in larger particles. This process of distilling the gasoline from the oil is very nearly perfected by the base compression so that when the charge leaves the base and enters the cylinder what little oil goes with it is necessarily in very small and therefore harmless particles. The oil that remains is nearly pure again, as when originally mixed with the gasoline. This pure precipitate lubricates as in any splash system.

Owing to the open exhaust and the built-up by-pass all of the parts of the Roberts are accessible, permitting accurate filing to size. As opposed to parts that depend upon the case of their form, the superiority of this method is obvious.

The Roberts is undoubtedly strong, simple, sane and safe, and the figures show the weight of the motor to be 3.4 lbs. per brake horsepower and the gasoline (and oil) consumption to be less than one pint per horsepower per hour. As the efficiency of planes is rapidly increasing 50 or 75-horsepower can be expected to satisfy most all reasonable demands.

NEW ENGLAND HAS LIVE MEETING

Boston, November 28.—The attitude of the average American citizen toward aviation was severely criticized at tonight's annual banquet of the Aero Club of New England by Eugene P. Meriet, a Parisian aviator, and James Lewis of Boston, who qualified for his pilot's license after studying at the Voisin and Nieuport schools.

Lewis declared that he had come back to America expecting to find some opportunity for competition, but that the prizes offered were so small and scarce that he had made arrangements to return to France in February. He returned here soon after winning his license on October 6 and had not found a prize worth competing for. Lewis severely criticized many of the French schools, saying their tuition rates were very low, but that they charged the unwary pupil about five times the amount of breakage actually incurred, and in addition many of them required large deposits, under the guise of protection from lawsuits by neighboring land holders.

The following officers were elected: Jay B. Benton, president; Henry Howard, first vice-president; John J. Van Valkenburgh of South Framington, second vice-president; A. R. Shrigley, secretary; Wm. Carroll Hill, treasurer; Nathan L. Amster, Jay B. Benton, Timothy E. Byrnes, H. Helm Clayton of Canton, J. Walter Flagg of Worcester, Charles J. Glidden, Henry Howard, Harry C. Pollard of Lowell, Griswold S. Hayward, A. R. Shrigley and John J. Van Valkenburgh, directors.

The list of committees is as follows: planes, W. Starling Burgess of Marblehead, Harold W. Brown and Albert A. Merrill; contests and balloons, Charles J. Glidden, Jay B. Benton, J. Walter Flagg; entertainment, Jay B. Benton, A. R. Shrigley and Wm. Carroll Hill; foreign relations, Griswold S. Hayward and Charles J. Glidden; house and library, Timothy E. Byrnes, Nathan L. Amster and John J. Van Valkenburgh; membership, F. S. Osgood, C. W. Barron and A. R. Shrigley; nominations, Charles J. Glidden and H. Helm Clayton.

CURTISS ARRIVES AT SAN DIEGO

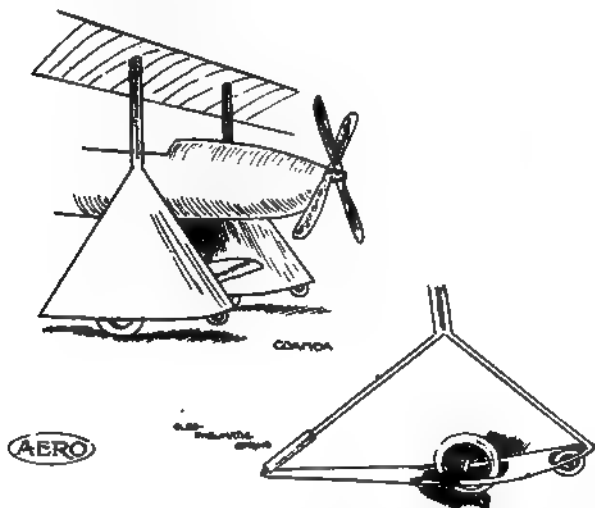
San Diego, Cal., December 2.—A winter of hard work was promised for the North Island aviation camp by Glenn H. Curtiss when he arrived in San Diego this morning. He intends to spend the winter experimenting with an hydroaeroplane, which will incorporate new lines and ideas, and give water-aeroplaning a greater degree of safety than has existed heretofore.

FRENCH ARMY TESTS EFFECT LANDING GEAR DESIGN

The French military aviation tests, which were organized by the War Department of that country for the purpose of discovering the aeroplane most suitable for military requirements, has not only provided the industry in France with a considerable amount of financial encouragement but, in addition, has furnished all those who follow the science of aviation with an accurate indication of the state of progress in the design of aircraft at the present day. In spite of the certain amount of criticism that has been rife in French journalistic circles, one cannot but admit that the programme of the tests was most judiciously chosen, as it has prompted the designers to give more attention to the improvement of those sections of the aeroplane, which at the present time, are far from satisfactory. The tests were based on three very important considerations; firstly, that of speed; secondly, that of useful weight carried, and lastly, that of facility of landing on unfavorable surfaces.

Of these three requirements there is little doubt that the one last named has given the French constructors more food for thought than have the other two combined, and thus we see as one of the most important effects of these competitions a universal improvement in the design of landing gear. In the following article we propose to analyze the methods which have been adopted to satisfactorily tackle this important problem, one which for a long time hence will undoubtedly be difficult of solution.

There is no doubt that the most remarkable innovation that has been brought about is the design of the landing chassis incorporated in the Antoinette "monobloc." A type of divided skid is attached to the root of each wing by means of vertical wooden struts, and between the two branches of each skid are mounted four wheels, three of them being mounted on the same flexibly sprung axle, while the other is arranged at the point of the skid, in order to prevent damage occurring to the machine in the event of its landing inclined too much towards the front.



It is interesting to note that more than one firm has adopted the multiple wheel, for the reason that a large bearing surface was necessary to prevent the wheels sinking into the soft ground. Another notable point in connection with the design of the chassis is that the whole is encased in a covering of fabric, thus reducing head resistance to a minimum. The running gear fitted to the Coanda biplane is conceived very much on the same lines as that of the Antoinette. In this case the skid is made out of sheet steel, and is hinged at the front end, while the rear support is rendered elastic by the interposition of an oleo-pneumatic spring.

The weight of the machine is taken on two wheels only, each of them being mounted by means of radius rods and elastic shock absorbers in its respective skid in the manner illustrated in the sketch. Similarly to the Antoinette, head resistance is avoided by the introduction of a "skirt" of fabric. In

addition to the two instances heretofore mentioned, there is one other landing chassis which has been modeled on absolutely novel lines. This is that of the Astra triplane. In this machine the tubular steel front spar of the bottom plane serves as the common axle for four enormous disc wheels, each of which is furnished with a pneumatic tire of exceedingly large diameter. Beyond the resiliency furnished by these tires, no shock-absorbing device is made use of.

In opposition to these constructors who have deemed it necessary to completely re-design their landing gear, in order to successfully compete in the tests, may be mentioned five constructors who apparently had such faith in the value of their landing devices that they considered no modification necessary. These constructors were Nieuport, Maurice Farman, Savary, Voisin and Goupy. The anticipations of these men were indeed well founded, for we find that the products of three of them are among the five machines that actually survived admittedly difficult tests.

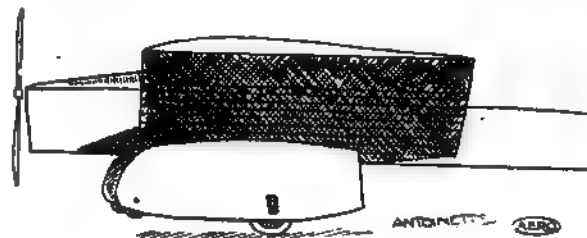
AERO

ASTRA

The remainder of the constructors represented, introduced modifications in the design of the landing devices fitted to their aeroplanes. For the sake of clearness we propose to deal with each machine separately and in alphabetical order.

Astra—This firm was represented by three different types of machines. A headless Wright biplane, an engine-in-front fuselage-type of biplane, and a triplane built on similar lines. The former of these machines is equipped with two pairs of landing wheels, fitted in the manner employed by Farman. The engine-in-front biplane is furnished with a chassis, bearing a marked resemblance to the standard 50-horsepower Antoinette monoplane. That fitted to the triplane has already been described.

Bleriot—In the case of the Bleriot, the most important modification is that the chassis has been attached to the underneath of the fuselage instead of to the top, as has hitherto been the case. This renders the landing gear much more sturdy, and in addition effects a considerable reduction in weight. A very ingenious device used by Bleriot to prevent the wheels sticking into soft ground is the employment of triple wheels. Each wheel is composed of three rims built around one single hub, which is mounted according to the conventional Bleriot method.



Breguet—The type of chassis employed is absolutely standard, with the exception that the front wheel is replaced by a double wheel.

Deperdussin—This chassis is composed of two skids to which is attached, by means of an elastic cord, the single axle that unites the two wheels. Besides using wheels of larger diameter than those usually employed, the Deperdussin firm entered one machine equipped with disc wheels.

Henry Farman—Two of the biplanes entered by Henry Farman are similar, as far as regards the landing chassis, to his racing biplane, with the exception that a third strut is carried to the middle of the skid in order to strengthen it. His third biplane is equipped with an extra skid and pair of wheels, this being attached centrally to the fuselage.

Hanriot—This chassis has much in common with the Deperdussin, except that to each skid is fitted a pair of wheels in the manner originated by Henry Farman.

Morane-Borel—This chassis is identical to that fitted to the standard machine with the exception that the skids are more strongly connected with the fuselage, and wheels of Farman-type have been made use of.

Paulhan—This landing chassis only differs from the Farman in the method of springing the axle between each pair of wheels. Miniature wheels are fitted to the points of the skids in order to prevent them from sticking in the ground should a landing be made at too forwardly inclined an angle.

Voisin—The Voisin firm entered two types of machines,

their touring type, and their "Canard." No change has taken place in the design of the former, excepting that a pair of wheels is fitted under the front of the fuselage in place of the single one previously employed. As regards the Canard, the main weight is taken by two wheels mounted on a common axle attached to the fuselage by means of radius rods. Two skids of steel tubing, each situated on either side of, and at an equal distance from, the center line of the machine, proceed forward from the rear span of the bottom plane to which they are hinged. The point of each skid is turned up so that the curved portion describes an arc of a circle a center of which is represented by the point at which radius rods are attached to the fuselage. In taking a landing shock the wheels recede against the action of a strong elastic spring, which connects them to the points of the skids.

Such are the different types of landing chassis that have taken part in the military tests, and such good results have been individually obtained, that it appears that it will soon be untruthful to class this section of the aeroplane as its weakest feature.

CORRESPONDENCE

Automatic Stability Experiments

To the Editor of AERO:

I have been interested in the late experiments carried on by the Wright brothers with their automatically balanced glider, for it appears that their device is on the same lines as one with which I have been experimenting for the past year. As a matter of fact, I sent them a sketch of my device last December, asking them to try it out, but I received a letter stating that they had no opportunity to look into my scheme.

I then set to work myself and built a model monoplane with a 16-foot spread and installed a 1½-horsepower motor in it. It was fitted with my automatic stability device, a very simple apparatus, consisting of two vertical vanes placed on top of the main plane and hinged to a vertical post placed near the forward edge. The rear ends were free to swing to right or left and were connected by a cord, which led from them to either end of the main plane and thence to the ailerons.

Its operation was very simple. When the machine started to skid or slide to one side, the side pressure exerted on the vertical vanes swung their rear edges toward the high side of the machine and the cord in turn, pulled down on the aileron on the low side and relaxed that on the high, thereby bringing the machine back on an even keel.

On the first trial, under its own power, the machine lost its fore and aft stability and fell nose first from a height of 10 feet, wrecking both the propeller and motor. I removed the motor and patched up the framework and then took the machine out on several towed flights in order to test out the automatic device, which proved quite successful in some respects, but which developed a few serious defects. The worst of these was the fact that the machine had a tendency to turn toward the side on which an aileron was pulled down, on account of the greater resistance. This might have been overcome if the aileron on the high side had been so arranged that it would have worked opposite to that on the low. It might also have been overcome by coincident action of the ailerons and rudders.

My next experiment was with a novel biplane model with the bottom plane stationary and the upper pivoted, with the exception of the middle section. My idea in mounting the plane pivotally would be to prevent the fatal downward plunges so common to machines with stationary planes after the operator has made a long dive. One will readily see the advantage of this when one thinks that of the fact that the downward plunge is caused usually by the pressure after a long, steep swoop being greater above than below the planes and thus forcing them on downward. With these planes it is possible to remove this pressure on the upper plane, entirely, and to exert an effectual brake on the progress of the whole machine. The construction was very strong, the plane being mounted on a transverse bar which is upheld by having the struts, or uprights, brought together in a tri-

angular construction with the bar at the apex.

I fitted the automatic device in front on this machine in order to counteract the tendency of the machine to turn to the side on which the ailerons pulled down. The vane instead of being hinged in front, is secured to a swinging yoke in its forward edge and to a swinging lever support in its rear. Now the plane will move to the right or left on parallel lines and with this system not only the side pressure is utilized to move the vane, but also the head motion of the machine itself. Under the impulse of the side pressure the plane will move sideways first, and then, as the cord to the aileron is attached near its rear edge, the forward movement of the machine will force the rear edge of the vane to assume the same position as its forward edge.

This latest device appeared to work to perfection while the plane was in motion on towed flights. The model motor was too weak to lift the biplane.

H. O. EIANI.

The Wright automatic stability device was not tried on the glider used at Kitty Hawk.

FOREIGN NOTES

England can now boast of her second lady aeroplane pilot in the person of Mrs. de Beauvoir Stocks, who graduated at the Grahame-White Aviation School, Hendon, near London. She performed the first half of her tests in the early morning, and immediately on completing them in the evening she gave a passenger flight to a friend of her own sex, Mrs. Gates. The latter is, by the way, the wife of Grahame-White's manager. This, we believe, is the first occasion on record when a lady pilot has flown with a lady passenger.

In connection with our lady pilots, it is interesting to note that Sub-Lieut. E. T. Hewlett, R. N., the son of Mrs. Maurice Hewlett, the only other lady pilot in England, qualified for his certificate on November 18th at Brooklands. The Hewletts are thus quite a notable family, Maurice Hewlett being one of our foremost English novelists, while his wife and son are, as is mentioned above, both fully qualified aviators.

Louis Bleriot is constructing at his works in Paris, a veritable "aeromobile" to the order of Henri Deutch de la Meurthe. Accommodation is provided in a comfortably upholstered limousine-type of body for four passengers. The pilot is provided with an exterior seat, and to his left is a spare seat, presumably for the use of a footman. In its general outline it bears a close resemblance to the 100-horsepower Gnome engine monoplane, with which Bleriot put up some startling weight-lifting records at Pau, south of France, not long since.

Many are the novel exploits that French pilots are undertaking, presumably for the purpose of gaining publicity. The latest stunt in this respect has been carried out by the aviator Durafour who, at Avenches, in Switzerland, on the 5th of November, flew to a wedding, and dropped from his machine a bouquet of flowers onto the procession.

E. PERCY NOEL, *Founder-Editor*

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The Editor is pleased to consider MS and photographs for publication, but only material that is likely to prove of interest to the readers of Aero. The Editor cannot undertake to answer technical inquiries except in the columns of Aero.

AN OPPORTUNITY FOR FRANCE

An effort is being made to induce foreign aeroplane and motor manufacturers to exhibit at the show which is to be held under the auspices of the Aero Club of America in May, at New York, with the possibility of similar shows being held at Chicago and St. Louis. From the first foreign report, French makers do not take kindly to the idea. We think they fail to see an opportunity.

Excepting the few large manufacturers of aeroplanes in this country, French makers are so far ahead of those in the United States that we can hardly be said to have an industry. They have sold probably a score of machines where American makers have sold one. With their greater facilities of manufacture and

demonstration, there is no reason why they should not successfully invade the United States and for the first year or two, at least, sell more machines than our own manufacturers.

For this reason it might appear well to discourage a comprehensive exhibition of foreign machines here, on the ground that it would hurt the home business. Yet, paradoxically, we think that this would not be the result.

It seems logical to assume that such an invasion by foreign makers, added to what has already been done and what will be done next spring by the home industry, would be the genesis of an extensive industry here.

The American needs to be convinced of the financial possibilities of an aero industry before he will go into it enthusiastically. The average citizen requires the demonstration of success already achieved, rather than in prospect, before he will consider aviation seriously.

It is possible that for the first year and possibly the second year following this exhibition of foreign-made planes and motors, that imported machines would have a greater sale than American products, but at the same time this very importation, coupled with the convincing demonstration of the aero expositions planned, should increase the whole business to such an extent that American makers would profit as much as the foreigners.

The French idea is that showing their machines here will only give Americans a better opportunity to copy them. They have another false idea that in this country French aeroplanes would not be regarded as favorably as the home product.

Under the circumstances it seems that American makers will welcome any demonstration that will arouse enthusiasm over aviation here and would be content to have as many foreign machines as possible bought in the United States, knowing that the more interest shown—provided it is backed by that argument clincher, money—the greater the present and future for all concerned with aviation in America.



DATES AHEAD

Bay City, Tex., December 7-8-9.—A. R. Smith, Mills aviator.
Bryan, Tex., December 14-15-16.—A. R. Smith, Mills aviator.

The Aero Club of San Jose, Cal., is planning exhibitions for Christmas week and for next spring. The contracts will be made on a percentage basis, and the flights will start from the oval of a mile race track, located on the edge of the city. A two-day exhibition was held this fall, but the club was dissatisfied with the aviator, and the officials feel certain that the attendance figures would be much better with another man. The previous attendance was 3,800 for the two days. The secretary of the club, T. E. Graham, may be addressed at 31 South Second street, San Jose.

Activity of Aviator and Builder

B. Russell Shaw, of the Shaw Exhibition Company, is putting the finishing touches on a new Curtiss-type, with the fan-tail and single-plane front elevator. It will be tried out on the first favorable day on the motor speedway at Indianapolis.

Capt. G. L. Bumbaugh, of Indianapolis, Ind., intends to make another trial for the Lahm cup soon, starting from the south. Bumbaugh received an order from the government last week for a 9,000 cubic foot rubberized balloon for the signal corps.

The Ashworth brothers, of Providence, R. I., are building a monoplane along original lines, intended to minimize head resistance. Their first machine has already made flights, but they are at work upon a second and improved flyer, which will be tried out shortly.

Ladis Lewkowicz, instructor for the Queen Aeroplane Company, has been in Los Angeles for more than a week, but has found it hard to locate a field suitable for instruction. He writes that Dominguez field is now plowed and out of the question for a schooling ground. He has been offered a good field in Pasadena, Cal., and he will probably settle there as soon as the three carloads of monoplanes and spares arrive. Peter J. Minck has left the employ of the Queen Monoplane Company.

The American Aeroplane Manufacturing Company has been formed in Chicago, Ill., to begin the manufacture and exhibiting of aeroplanes extensively. J. C. Mars has been made vice-president of the concern.

Frank Carroll, of 3114 St. Ann street, New Orleans, is organizing an aero club in that city, and is anxious to hear from interested parties in this section. He already has an option on a large tract of ground near Lake Ponchartrain, where it is planned to erect a hangar 100 by 45 feet for the housing of the first machines. The club grounds will be open to all kinds of experimenters. Carroll is the designer of a speedy motor boat, which is provided with aeroplanes to keep it high in the water.

The Army aviation corps left Washington, November 28, for Augusta, Ga., where the winter camp will be established. The soldiers traveled in a special train of eight cars. Capt. Charles De Forest Chandler will be in charge of the camp, assisted by Lieuts. C. P. Kirkland, H. H. Arnold and T. De Witt Milling. Dr. John P. Kelly, of the medical reserve corps, accompanied the aviators as their physician.

Mrs. Smith Murphy, a wealthy young widow of Sumner, Miss., has purchased two monoplanes from a New York firm. While she has not stated definitely that she will fly herself, it is reported that the machines are to be used in overseeing her large plantation, both by herself and her manager. A hangar has been constructed on her estate.

THE DIARY OF FLIGHT

FRIDAY, NOVEMBER 24.

Newport, R. I.—Lieutenant John Rodgers flew Navy Burgess hydroaeroplane.

SUNDAY, NOVEMBER 26.

Monroe, La.—Carl Mourfield made two flights, testing out a new Curtiss-type biplane, built by himself in collaboration with George W. Serger.

Savannah, Ga.—Beckwith Havens and Eugene Godet flew. Havens totaled 32 minutes and 50 seconds in the air and pleased the crowd greatly. Godet damaged the tip of one plane while alighting at the end of what was his first flight and the first of the day. Soldiers from Fort Screven were present on the field and a mock battle was one of the features of the afternoon.

Marblehead, Mass.—Clifford L. Webster flew Burgess biplane.

MONDAY, NOVEMBER 27.

Savannah, Ga.—Beckwith Havens flew for 20 minutes in a high wind. He circled over the automobile racers on the beach, passing over the grand stand at almost the same time that Ralph Mulford, who afterward proved to be winner of the race shot by in his Lozier.

Marblehead, Mass.—Phillips W. Page carried motion picture operator as passenger in Burgess.

TUESDAY, NOVEMBER 28.

Marblehead, Mass.—Phillips W. Page and James Hargreaves, passenger, got ducking when Burgess wing tip struck water.

FRIDAY, DECEMBER 1.

Pensacola, Fla.—Nelson J. Nelson flew twice, before a large crowd. He attained an altitude of 500 feet on his first flight and executed several circles and figure eights, ending his flight with a volplane.

SATURDAY, DECEMBER 2.

Kinloch, Mo.—Antony Jannus flew qualifying for his pilot's license, Benoist biplane equipped with Roberts six.

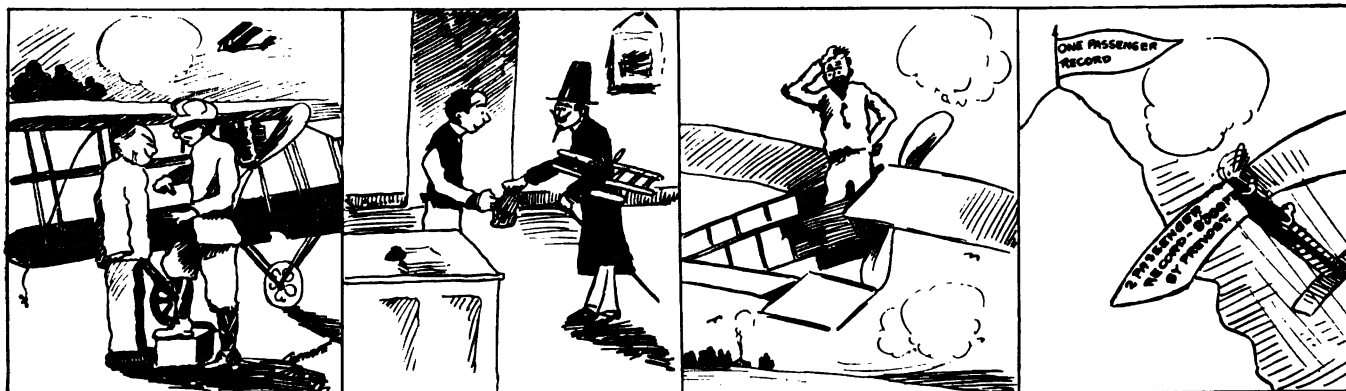
SUNDAY, DECEMBER 3.

Kinloch, Mo.—Antony Jannus carried passengers in Benoist biplane.

MONDAY, DECEMBER 4.

Atlanta, Ga.—Maxson Lillie, of St. Louis, flew in his Wright biplane.

Some Aero Events of the Past Week



Ray Wilcox will instruct Chinese soldiers in aeroplaning at San Francisco.

A Curtiss has been sold to a famous French Aviator. His name has been withheld at his request.

Ladis Lewkowicz cannot find a suitable flying field at Los Angeles.

Prevost with two passengers climbs near the one-man mark.

Aero Club of Saint Louis

Temporary Office: 19 South Broadway, St. Louis

E. Percy Noel, Secretary

BULLETIN

The New Board Meets

To the Members of the Club:

At the first meeting of the new board of governors held at the Planters Hotel, Monday, December 4, officers to serve during the ensuing club year were elected, as follows:

Robert T. Nolker, president;
James W. Bemis, first vice-president;
William E. Simpson, second vice-president;
Charles P. Senter, third vice-president;
E. Percy Noel, secretary;
William A. Brady, treasurer.

Informal resolutions were adopted thanking Mr. Lambert, retiring president, for his untiring work of the past two years, and thanking Capt. Robert McCulloch for the assistance that he has lent the club at every opportunity.

It was decided to present to Howard W. Gill, a silver plaque, to commemorate his breaking the American aeroplane endurance record at Kinloch field, October 20. This will be done immediately.

CLUB ROOMS.

The board appointed the president and secretary a committee with power to act in the matter of leasing for a period of two years down-town floor space that can be converted into suitable and comfortable quarters for the club, according to suggestions made by the president.

It is planned to make these rooms as comfortable as any non-residential club, if the present plan can be carried out. The committee hopes to have the quarters ready for use soon after the first of the year.

COMMITTEES AND MEETINGS.

The president is about to appoint a number of standing committees to serve during the year. If members who are willing to serve on committees will send their names to the secretary at once, the president will be able to make the most advantageous appointments.

Several members have asked that monthly meetings and weekly luncheons of the club be held. The secretary will be glad to receive any suggestions with this in view and hopes that all members desiring monthly meetings where pertinent topics can be discussed seriously, lantern slides and motion pictures shown, will communicate with him at once. All suggestions received will be placed in the hands of the proper committee for prompt consideration.

E. PERCY NOEL,
Secretary.

JANNUS QUALIFIES FOR HIS LICENSE

Kinloch, Mo., December 5.—Antony Jannus, of the Benoist school, qualified for his pilot's license on Saturday afternoon, December 2. He passed the tests easily and came to earth within nine inches of the mark on his first landing test. His flights were judged by A. B. Lambert, Tom Benoist and G. L. Holton. It has been generally recognized for some time that Jannus had the ability to qualify for a license.

Today Jannus carried two passengers during the afternoon. The first, Rey Wheeler, of San Jose, Cal., is a new pupil at the Benoist school and he was in the air for 12 minutes. Later Miss Alva Schnalder, of St. Louis, was taken for a nine-minute spin. There was no flying up to Saturday of last week because of snowy weather and engine troubles.

G. W. Beatty left St. Louis last night for Chicago, Ill., where he will stay for a short time before going to Dayton, O., to look over a new Wright machine which is to be deliv-

ered to him about January 1. From Dayton, Beatty goes to Mineola, L. I., and he will stay there until January 20, teaching, after which he will return to his pupils in St. Louis. He is accompanied by Mrs. Beatty, who was Miss Genevieve O'Hagan. Their marriage took place in St. Louis last week.

The machine which Beatty flew under the management of W. B. Davis, was attached by the Wright Company for non-payment of royalties on Davis' part, and this is the reason for the purchase of a new flyer.

FOREIGN NOTES

Claude Grahame-White has, during his short vacation in England, been directing his works and flying ground at the London aerodrome. Three of his hangars have been equipped with a splendid plant of wood and metal working machinery, and he proposes to utilize this small factory for the purpose of repairing and constructing machines for his numerous shed holders. Within a few months he intends to establish a much larger works in the neighborhood, where he will commence on the construction of aeroplanes to his own designs.

Bleriot has delivered to the French army a further batch of monoplanes, built especially to fulfill military requirements. The delivery consisted of four 50-horsepower single-seaters, and three two-seated monoplanes driven by 70-horsepower Gnome engines. The latter machines are of the pigeon-tail-type, in which the pilot and passenger sit side by side.

There was to have been an aviation meeting at Toulon, commencing at the beginning of October, but unfortunately the sad catastrophe which overcame the French warship *Liberte*, prevented its taking place. However, we hear that the meeting as originally arranged is to commence on the 24th of December, and continue until the first day of the new year. It is announced that Beaumont and Lucca will take part in the proceedings, both of them being natives of that town.

Following the example of most of the other constructors in France, the Deperdussin firm are opening a flying school at Pau, where the weather is more or less similar to that on the Riviera during the winter. The aviator Pascal will attend to the work of instruction. This firm is also proposing to establish another school solely for the instruction of naval and military officers, which will be managed by Auburn, with Busson as his assistant.

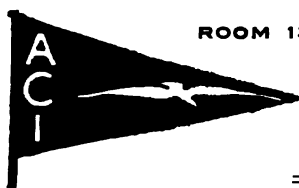
A new machine, much after the Breguet-type, and furnished with a 70-horsepower Gnome engine, has made its appearance at Havre, where it is undergoing tests at the hands of Molon, who will be remembered as having been a first-class exponent of the Bleriot monoplane. The new machine has a span of 35 feet, and the supporting surfaces, which are staggered after the fashion of the latest Henry Farman biplane, have an area of 500 square feet.

Kimmerling is rapidly becoming famous in France for his flying in high winds. Not long since he mounted his Sommers-Gnome at the Bron aerodrome while a vertiable tempest was in progress, and flew out of sight across-country. After an absence of nearly an hour he was seen flying back to his headquarters at a terrific speed. He landed by means of an accurate glide from a height of 600 feet, and on account of his exploit was the subject of much congratulation.

SEELEY BUYS ELBRIDGE COMPANY

Rochester, N. Y., November 21.—Lyman J. Seeley, for years connected with the Elbridge Engine Company as sales manager, has personally bought up the business and assets of that concern. The company has patterns all made for several new engines for 1912, all of the four-cycle type, and prospects appear bright for the future of the firm.

THE AERO CLUB OF ILLINOIS



OFFICE
ROOM 130, THE AUDITORIUM
CHICAGO

FLYING FIELD
FIFTY-SECOND AVE. AND
TWENTY-SECOND ST.

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C. E. GREGORY.	C. H. CHADWICK.

BULLETIN

To the Members of the Club:

The second special members' meeting will occur Friday evening, December 15, at the Auditorium Hotel. There will be an instructive talk and discussion. You will receive an outline letter from headquarters.

Watch this space carefully for important announcements each issue.

GROVER F. SEXTON,
Secretary.

To the Members of the Club:

Call Harrison 3289, the new direct wire to headquarters at the Auditorium. It's a live one.

The best representative foreign and domestic aeronautical periodicals are now being sent regularly to the club reading room for the more convenient reference of all members. The newest book publications on experimental accomplishments, practice and theory, together with complete indices of all literature available on the subject of aeronautics are being secured and will be incorporated in the club library.

A complete group of representative types of machines at the International Aviation Meet, Chicago, 1911, photographed by the club official photographer, has been printed and will be hung on the walls of headquarters the first of this week, when the framing will be completed. There are in addition three 40-inch bromide enlargements, wonderfully attractive, and showing absolutely perfect detail of Cal. Rodgers' Wright; Earl Ovington's Bleriot and Mestach's Morane, which are worth traveling from out of town to see, as you will agree when you view them at the Auditorium.

Technical Tests

December 2: In pursuance of the prospect extended last week in these columns of special descriptions of interesting experimental devices and apparatus for practical tests, we are glad to be able to draw attention herewith to the rather unique arrangement for making horsepower determination suggested by Mr. S. V. James, engineer, of the aerodynamics committee of the A. C. I.

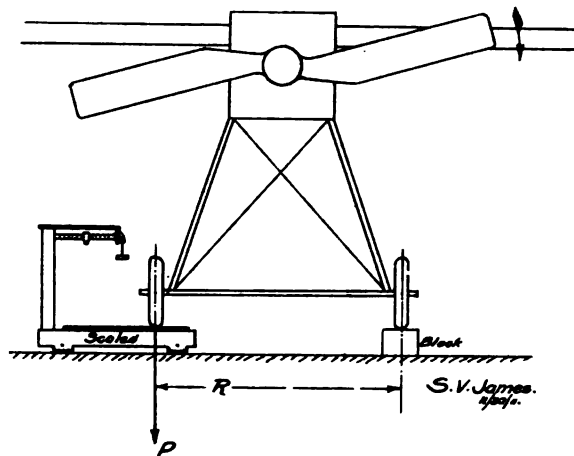
Appliances and arrangements of apparatus for indicating or determining the actual performances of machines are always worth studying and the real enthusiast's appetite is particularly voracious when the idea is found to be out of the ordinary.

It can hardly be denied that in the neighborhood of Chicago are located at the present time an unusually large number of devotees to the art of aviation who are prolific in original ideas, properly in accord with the fundamental laws of the

science, and who are to be credited with actual accomplishment. The testing and results obtained in many interesting cases of the sort are to be delineated for the particular benefit of club members, and those others who would be interested to keep in touch with such developments.

Ready Method of Determining Horse-Power Delivered

December 2: A simple method of determining the horse-power delivered by the propeller of an aeroplane is illustrated by the accompanying sketch, which represents the front view of an aeroplane so arranged that one wheel rests upon an ordinary platform scales. The other wheel rests upon a block exactly the same height as the scale platform.



When the propeller is at rest the scales will show one-half the weight upon the front wheels. When the propeller is being driven by the engine in the direction shown by the arrow, there will be a tendency for the air torque reacting upon the machine to turn the whole aeroplane in the opposite direction to the propeller. This tendency makes itself felt as an increase in the weight upon the scales. We call this increase "P," and the distance between the two wheels "R." When the motor is turning the propeller at "N" revolutions per minute, and the force "P" is expressed in pounds, then the horsepower delivered will be given by the following formula:

$$H. P. = \frac{2\pi R N P}{33000}$$

In this formula $2\pi R$ represents the circumference of the circle of which "R" is the radius in feet.

We will illustrate the above formula by means of an example: Let the distance between the front wheels, "R," be six feet, and let the number of revolutions per minute, "N," be 1,000.

Let "P," the increase in weight, be 35 pounds. Now, by substitution in the formula, we have:

$$H. P. = \frac{2\pi \times 6 \times 1000 \times 35}{33000} = 40.$$

This method will be found very convenient, as it requires nothing but an ordinary scale and revolution counter as additional to the ordinary equipment.

Nels J. Nelson, of Mills aviators, scored a ten-strike in a recent exhibition at Palmetto Beach, Fla., to use the expression of a local correspondent. The crowd was large and, despite the fact that he was compelled to start from wet sand, Nelson succeeded in doing all the well-known exhibition stunts. His dips were especially daring.

A Curtiss aeroplane has been sold to a famous aviator and aeroplane manufacturer in France. His name has been withheld by the Curtiss Company, at his request, pending the delivery of the machine. A hydroaeroplane school will be opened within the next two weeks at Miami, Fla., where purchasers of the Curtiss triad will receive instruction.

USEFUL HINTS GIVEN BIPLANE BUILDERS

Illustrated herewith are four construction details for biplane builders. Fig. 1 illustrates a socket joint used on several machines at Mineola. The part A is a macadamite button, cast about the beam of a short-shouldered carriage bolt. B is a section of steel tubing which fits down over the button. Into the socket thus formed the end of the upright is placed. A hole should be drilled through both the upright and the tube end and a cotter pin inserted. By removing the pin and slipping up the tube, the upright can be easily removed, obviating the tedious tightening and loosening of the wires.

Fig. 2 illustrates a socket found on Grey Eagle biplanes. Its use in Curtiss-type construction eliminates the heeling over of the rear socket when bolted through the main rib. A $\frac{1}{2}$ -inch stove bolt with flat head goes through socket, rib

and spar.

An excellent brake for Curtiss-type chassis is found in Fig. 3. It consists of two claws C, spring A and trip B. When stretched one-half its normal length the spring should pull about 50 pounds. Before starting on a flight the claws are pulled up and caught by the hooked ends of the trip. As soon as the machine is well in the air the trip cord may be pulled, releasing the brake claws. Upon landing, the brake grips the ground without further attention.

Control wires should be supported or guyed every eight or ten feet. Fig. 4 illustrates a support made of a short length of spread steel or brass tubing soldered to a piece of sheet brass. The wire should be packed well with cup grease after being inserted in the tube.

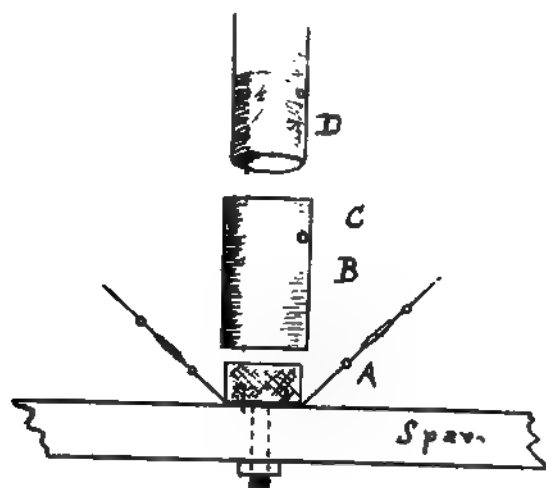


Fig 1

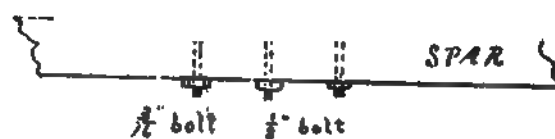


Fig 2

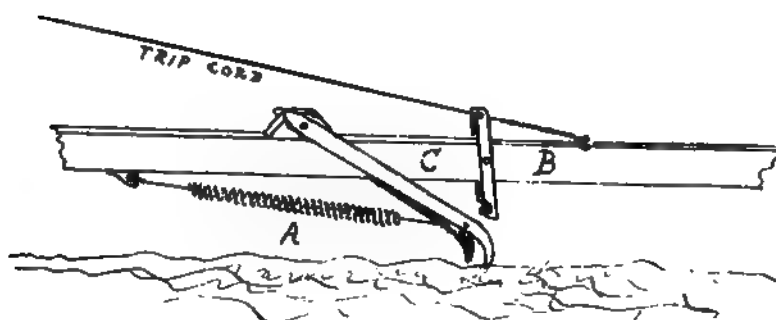


Fig 3



Fig 4

Merrill Mether, of Waterloo, Ia., is building a monoplane, which will be ready for trials about the first of the year. He is being assisted by Eliot N. Yearsley, who has had quite a little experience in California. The machine will be tried first with a four-cylinder automobile motor, but it is intended to secure an Anzani if this does not prove successful.

Ladis Lewkowicz will give an exhibition over Pasadena,

on New Year's day, according to an announcement recently given in the Western press.

Roy Wilcox, of Albion, Mich., has, according to report, joined the Chinese rebels as an aviator. He has gone to San Francisco with one complete plane and materials for a dozen more are being shipped after him. In San Francisco, it is said, he will instruct 20 Chinese in flying the machines.

Aero Club of America Notices

The following aviation pilots' licenses were granted at the meetings of the executive committee and board of governors held on October 18, 25, November 1, 8 and 13:

Jesse Seligman	No. 64
Harold Kantner	No. 65
Mortimer F. Bates	No. 66
George W. McKay	No. 67
Phillips Ward Page	No. 68
Clifford L. Webster	No. 69
Claude Couturier	No. 70
Beryl J. Williams	No. 71
Fred DeKor	No. 72
Max T. Lillie	No. 73
Dr. Henry W. Walden.....	No. 74
Albert Elton	No. 75

FOWLER TRAVELS SLOWLY

Fort Worth, Tex., November 29.—E. R. Fowler arrived here today from Ixona, Tex., making the 15 miles in a trifle more than 14 minutes. Fowler's route in the future has been announced by his managers as touching at the following towns: Waxahachie, Tex., Houston, Tex., New Orleans, Mobile, Ala., Birmingham, Ala., Atlanta, Ga., Danville, Va., Richmond Va., and Washington, D. C.

Cypress, Tex., December 2.—E. R. Fowler arrived here this afternoon at 5:30, after traveling from Groesbeeck, Tex., which he left at 10:35 this morning. Cypress is 30 miles from Houston, and Fowler now totals 1,665 miles.

AEROPLANES FIGURE IN OFFICIAL REPORTS

Washington, D. C., November 15.—Aeroplanes are becoming a factor of international commerce. The records of the Bureau of Statistics, Department of Commerce and Labor, show that more than \$50,000 worth of aeroplanes were imported into and exported from the United States in July, August and September of the present year. The Bureau of Statistics only began the maintenance of a separate record of this comparatively new article of commerce with the opening of the present fiscal year. In July two aeroplanes were exported from the United States to Canada at a total valuation of \$6,950. In August two machines were exported to Canada, their total value being \$8,000. In September one machine was exported to Canada, its stated value being \$3,500, making the total value of exports for the three months, \$18,450. On the import side no transactions are given for July, but in August two aeroplanes were imported from France, their combined value being \$15,091. In September the number imported was five, valued at \$22,752, one being from England, valued at \$18,062, making the total importations for three months eight aeroplanes, valued at \$37,843, or an average valuation of \$4,730 each.



1,008,437, November 14, 1911.—Edmund Seelig, Berlin, Germany. A dirigible airship comprising gas-containing bodies, an aeroplane arranged above said bodies and increasing the lifting effect thereof, a carriage upon the aeroplane and movable longitudinally thereon after the manner of a traveling crane, and propelling machinery in said carriage, the movement of said carriage varying the inclination of the airship horizontally, for the ascent or descent of the same.

1,008,479, November 14, 1911.—Christopher J. Lake, Bridgeport, Conn. A flying machine having a gradient series of pivotally mounted supporting surfaces extending upward toward the rear, each of said surfaces being of varient transverse dimensions and being pivoted upon an axis approximately coincident with the line of greatest transverse dimension of the surface.

1,008,630, November 14, 1911.—Harry Wilfred Du Puy, Pittsburgh, Pa., assignor to Pennsylvania Rubber Company, Jeannette, Pa., a corporation of Pennsylvania. A hollow or chambered wing for an aeroplane formed of a rigid framework and upper and lower flexible membranes stretched thereon and inclosing said framework, the lower membrane being perforate, substantially as and for the purpose described.

1,008,641, November 14, 1911.—Thomas M. Gregory, Akron, Ohio. A toy balloon of thin rubber having a relatively short open tubular projection adapted to be further shortened by inflation of the balloon and means to expand the balloon and seal the same when expanded, consisting of a piece of flat rubber tubing having its outer end permanently open and fixed in said tubular projection and its inner end normally closed.

1,009,017, November 14, 1911.—Louis Bleriot, Neuilly-sur-Seine, France. Apparatus for the simultaneous control of several structurally independent and independently movable rudders comprising a part movable in every direction, a handle for operating it, and wires connecting the ends of the tiller of each rudder to diametrically opposite points of the movable part.

1,008,888, November 14, 1911.—Francis E. Borkenhagen, Caldwell, Idaho. A balancing device for biplanes comprising a frame, a power shaft journaled therein, a propeller driving shaft, geared connections between the shafts, biplane frames in which said propeller driving shafts are journaled, rocker members fixed to the frame of the biplanes, a countershaft journaled in the frame of the apparatus, flanged wheels fixed to said countershaft and engaging said rocker members, and means for rotating the countershaft.

1,008,965, November 14, 1911.—Albert Gross, Bad-Ems, Germany. A propeller for dirigible balloons or air vehicles provided with blades consisting of hoops provided with a cover of canvas or other suitable material, sleeves or hubs arranged upon the hollow propeller shaft, each sleeve having attached to it one of the ends of the hoops forming the propeller blades, and means for coupling the source of power with either of said sleeves, so that the propeller correspondingly acts to drive the balloon or air vehicle either forward or backward, substantially as described.

1,008,761, November 14, 1911.—Rufus Clayton White, Los Angeles, Cal. A flying machine comprising a main frame, propeller shafts mounted vertically in the main frame, propellers upon the lower ends of the propeller shafts, there being universal joints in the propeller shafts so as to allow the propellers to swing, a sliding frame in the lower part of the main frame and connected to the propeller shafts, for swinging the propellers in one direction, a slide for swinging the propeller shafts in another direction, and hand levers for operating the sliding-frame and slide.

1,009,010, November 14, 1911.—Aladar de Bajza, London, England. An airship having in combination with a gas envelop means for maneuvering the ship consisting of sets of associated engines and propellers mounted at the fore and aft ends of the ship, every set being independent of the others, and devices whereby any one of the engines and the propeller associated with it may be vertically tilted simultaneously as well as orientated simultaneously without altering the alignment of their shafts.

1,009,736, November 28, 1911.—Louis Beauclerc Goldman, Downsleigh, Haywards Heath, England. A flying machine comprising a frame, air planes secured thereto, a bearing ring provided with trunnions at its sides which are mounted in the said frame, a tubular body portion having a ring secured around its middle part, said ring being revoluble in the said bearing ring, brackets projecting on opposite sides of the said body portion, propellers journaled in the said brackets, a motor arranged inside the said body portion, and driving devices connecting the motor with the said propellers.

1,009,780, November 28, 1911.—Pehr A. Nilson, Philadelphia, Pa. A flying machine including a body, telescoping metal top plates forming a cover on said body and projecting at their ends beyond the body and flexible means for bending said ends up and down to steer the machine vertically, and means for steering the machine from right to left.

AERO MART

These Notices Bring Results

ALL WANTS 1c A WORD FOR SALE and FINANCIAL, ETC. 2c A WORD

PAYABLE STRICTLY IN ADVANCE

BOX NUMBERS

If desired, replies may be received at the offices of the Aero Publication Company. Advertisers wishing to take advantage of this convenience will pay 10 cents extra for registration, to cover the cost of forwarding replies.

Notice to Advertisers

Beginning with Vol. III., No. 14, the issue of AERO dated January 6, 1912, rates for advertisements appearing in the AERO MART will be advanced in accordance with the following schedule.

Situations and Wants, 2 cents a word.

For Sale, Financial, Models and Model Supplies,

Patents, etc., 5 cents a word.

Payable strictly in advance.



SITUATIONS VACANT.

MANAGER—I have made straightaway flights in biplane. Would like to have manager who would furnish machine for exhibition work. Address Box 185, care Aero, St. Louis.

SITUATIONS WANTED.

ASSISTANT—What individual or factory will give me a chance to obtain experience with motors and engines, during the winter months, with a possibility to take up aviation next spring? University graduate. Address W. Spalter, 985 Third Ave., New York City.

AVIATOR AND MECHANIC—Recent graduate Wright school desires position as aviator. Reference furnished. Address E. E., care Wright Co., Dayton, Ohio.

AVIATOR—Experienced Curtiss operator is open for flying position. Box 182, care Aero, St. Louis.

AVIATOR—Young man desires backing or employment. State full particulars with your proposition. Box 178, care Aero, St. Louis.

INSTRUCTOR—Aeronautical expert (French) instructor for flying biplanes and monoplanes. At present employed; superintendency, construction and flying, years of experience. Thoroughly capable to take charge manufacturing concern, to teach and construct privately or otherwise, various types aeroplanes, splendid success; best references as to ability, habits, etc.; seeks position of trust. Box 177, care Aero, St. Louis.

LICENSED AVIATOR—Aero Club of France, Bleriot and Farman flier, is open for position. P. M. S., 965 Elboren Ave., Price Hill, Cincinnati, Ohio.

MECHANIC—Aero mechanic, six years' experience, best aero references; monoplane and biplane experience. Wish position as aviator mechanic or in shop. Box 172, care Aero, St. Louis.

MISCELLANEOUS WANTS.

AVIATOR—Information wanted concerning best method and terms learning. Address J. M., care Aero, St. Louis.

FACTORY—Wanted, small factory or shop with facilities for light woodworking, in good manufacturing location; middle west or near New York. Full particulars. Box 2476, Station G, Washington, D. C.

MOEDEBECK HANDBOOK—Wanted, a copy of Moedebeck's Handbook. Will pay \$2.25 for second-hand copy in good condition. Box 200, care Aero, St. Louis, Mo.

MOTOR—Wanted at once one or two second-hand Gnome motors, 50 or 70-horsepower. Address E. J. Romano, 1623 Summit Ave., Seattle, Wash.

PROPELLER—Chauviere or Normale wanted. Box 181, care Aero, St. Louis.

FINANCIAL.

PARTNER—I have a rough model of an entirely new style of monoplane, of low cost, light weight, and automatic stability with feathering saddle wheels and lift and propel with small power. I want an expert in aircraft model work, who will collaborate with me on shares, in making a presentable model. Box 184, care Aero, St. Louis, Mo.

WANTED party with a thousand dollars to build aero engine. Has proven a success for over two years. E. Flick, 2325 Van Buren, Chicago.

FOR SALE.

ADVERTISING MACHINE—For sale, U. S. patent automatic advertising electric machine, very large daily profit, with small investment of money. J. Brandieri, 111 Garfield place, Cincinnati, Ohio.

AEROPLANES—Curtiss-type equipped with six-cylinder Kirkham motor. Carl Mourfield has made 20 consecutive flights, ranging from five to 20 minutes without a single mishap in same. Price, complete, \$2,500.00, or will sell without motor for \$1,000. Material and workmanship guaranteed equal to any on the market. Reason for selling, Mourfield wishes to quit exhibition flying. Address, Aeroplane, Box 607, Monroe, La.

AIRCRAFT SUPPLIES—Aeroplanes for sale and built to order; propellers, models and model stock; Chicago engines; flying models. Chicago Aero Works, H. S. Renton, Prop., 164 N. Wabash Ave., Chicago, Ill.

AIRSHIP—For sale, complete with silk-bag, motor and tent; \$300 f. o. b. Seattle. H. P. Vidal & Co., New Westminster, B. C.

When writing to advertisers, please mention AERO, the first weekly.

Directory of Aviators

HARRY N. ATWOOD

(Burgess Wright.)

Address: Clayton & Craig Aviation School, 15 Harcourt St., Boston.

RENE BARRIER(Gnome Driven
Queen Monoplane.)Address: Care Queen Aeroplane Co., 71 Broadway or Fort George
Park, New York City.**MORTIMER F. BATES**(Gnome Driven
Moisant Monoplane)

Care: The Moisant International Aviators, Winfield, L. I.

HILLERY BEACHEYBeachey-Heimann Biplane
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Address: 1122 Washington Avenue, St. Louis, Mo.

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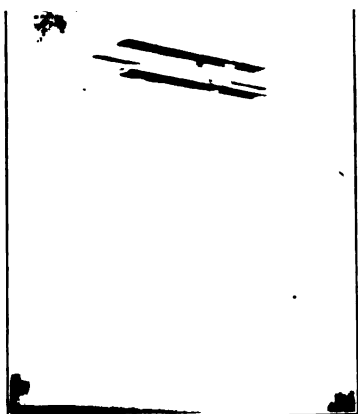
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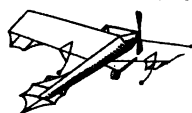
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December 16, 1911

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Vol. III No. 11

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Edited by E. PERCY NOEL

CORNELL PREPARING FOR INTER-COLLEGIATE MEET

C. H. WETZEL MAKING TOWED FLIGHT IN CORNELL GLIDER No. 2

Ithaca, N. Y., December 9.—The Cornell Aero Club has already made good progress in preparing for competition in the inter-collegiate aero meet next spring. The designs for three gliders have been finished and the work of constructing them commenced, while numerous flights have been made this term in glider No. 2.

The club is divided into three sections and the one making the best showing in the club elimination contests will be chosen to represent Cornell at the meet. Section A is building a 32-foot monoplane glider, Section B a 29-foot biplane and Section C a 45-foot biplane, with the upper surface greater than the lower one. Each will be fitted with seats, skids and control levers. The right-hand lever controls fore-and-aft stability and lateral balance as in the H. Farman, while the left-hand lever actuates the direction rudder.

The two gliders built by the club last year were equipped with the same control system used this year. They were operated very successfully in the inter-collegiate meet at Boston. With them a number of towed flights have been made this year. An altitude of 50 to 60 feet has been attained with only 50 feet of rope.

The present club course started November 2, all of the sections working together for practice on a balancing machine. This consists of a seat, provided with outriggers carrying allerons and tail. The apparatus was mounted on a three-foot post utilizing a ball and socket joint, the surface connected to an H. Farman-type lever. The pupil mounted the seat when the wind was brisk and prevented the apparatus from capsizing by the use of the control.

The new men were drilled upon this machine until they showed a fair degree of skill, then a balancing contest was

held between teams and from the three sections. In these, Section B won, and Section C was second. The enthusiasm over these events was great and the keenest rivalry exists between the three teams at the present time.

Before work was started on the new gliders the designs prepared by the sections were submitted to an engineering committee, consisting of the general superintendent of the course and two others, who have had experience in glider



THE EQUILIBRIUM IS GOOD

design and construction. A prize will be awarded the section whose glider is first in the air.

The officers of the club this year are Crosby F. Frank, president; R. V. Proctor, vice-president; Elmer Rae, recording secretary; Kerr Atkinson, corresponding secretary; Frank Short, treasurer. C. H. Wetzel, '13, is head instructor and general superintendent; the engineering committee consists of C. H. Wetzel, E. C. Gillespie, '12, and Kerr Atkinson, '12. The instructors at the head of each section are R. H. Depew, '13; H. Cape, '13, and W. E. Phillips, '14.

GRAHAME-WHITE RETURNS

New York, December 9.—Claude Grahame-White, who was recently awarded the \$10,000 prize for the Statue of Liberty flight by the International Aeronautic Federation in Rome, returned from Europe on Thursday. The English aviator is going out to the Pacific Coast with his 100-horsepower Gnome-Nieuport and his 50-horsepower Hendee-Baley Grahame-White biplane.

Grahame-White will be handed a check for \$10,000 by the Aero Club of America as soon as official notice is received of the decision.

"There were rules made for the contestants for the prize and I complied with them, while others did not," said Grahame-White, on his arrival. "I left my affairs here and went to Rome, knowing that I alone could tell my story and give the proper account of all that transpired before the flight round the Statue of Liberty. I was sustained almost unanimously, receiving all of the votes, with the exception of those of the United States and Switzerland. Those delegates to the congress who represented the United States could hardly vote except for their contestant, and as for Switzerland, she is always against England."

BURGESS FACTORY KEEPS BUSY

Marblehead, Mass., December 8.—The Burgess hydroaeroplane has been in active service since its first installation, and during the last month more than 50 flights have been made, on most of which passengers and pupils have been carried.

On December 4 the set of hydroplanes for the navy Wright machine, were shipped to Annapolis, after they had been thoroughly tried at Newport in maneuvers with the Atlantic squadron, where Lieut. Rodgers delivered a message from shore to the battleship Ohio lying to some miles off, awaiting orders.

Among pupils being trained are R. H. White of the University Press of Boston; H. J. White, of Baltimore, Md., and G. W. Roosa, of Lynn, Mass. Among the women passengers during the last few days were Miss M. E. King and Miss Curtis of Boston; Miss M. Wainwright, Miss F. Webster and Mrs. G. H. Webster.

On December 6 the hydroaeroplane was used for the first time to go duck shooting. Sam Hathaway took out his rifle and with Mr. W. Starling Burgess, as operator, flew along the coast looking for ducks. A number of shots were made, but as it was difficult to shoot a duck with a rifle the hunters returned with an empty bag.

The shops are busy filling rush orders for hydroaeroplanes, as well as regular orders for Burgess machines.

A Burgess aeroplane and Burgess hydroaeroplane have been shipped to Los Angeles for winter training. The work will be in charge of Howard W. Gill, present holder of the American endurance record. The selection by Gill of the Burgess machine was made after a very careful study of the market, as he wished to obtain a type thoroughly satisfactory for general work.

The company will also have a school, located in Florida, to be opened about January 1, definite notice of which will be made later.

MAY USE HYDRO FOR LIFE SAVING

San Diego, Cal., December 9.—Capt. Washington Irving Chambers, who has been in charge of the navy aviation affairs in Washington, has been authorized by the Navy Department to accept an invitation from Glenn H. Curtiss to come to San Diego and observe the experiments to be conducted on North Island. Curtiss' work will be centered on the development of the hydroaeroplane. Chambers will probably remain here several weeks.

Curtiss is now building a hydroaeroplane rescue boat of 30-horsepower, designed to carry 12 men. Should the device prove successful it will prove the value of the hydroaeroplane for carrying passengers and for rescue work. The first carload of equipment arrived from the Hammohdsport factory Wednesday, another being expected the early part of next week.

Major Bell, chief of the United States Signal Corps, has made known his intention to detail several Pacific coast army officers to North Island for the purpose of studying aviation at the Curtiss school.

Baron A. de Bode, a military attache of the Russian embassy at Washington, D. C., visited the Curtiss training grounds here yesterday. He inspected the machines with great interest and made several sketches. He talked most enthusiastically with Glenn Curtiss, who took him about the grounds in person.

CURTISS MEN ENTER SOUTH AMERICA

Havana, Cuba, December 9.—The Curtiss aviators will hold a six-day aviation meet in this city, beginning December 22. Lincoln Beachy, Beckwith Havens, Eugene Godet and Charles F. Walsh have been chosen as the men to fly. The promoters of the exhibition have found the people highly interested throughout the island and numerous requests for seats and inquiries about the aviators have come to them.

Following this engagement, the Curtiss men will fly at Santiago and other points in Cuba, after which they go to South America where contracts have already been signed with Brazil, Venezuela and Argentine. The Curtiss Company will send two aviators to fly at the Key West Over-Sea R. R. celebration at which President Taft and a great number of prominent United States and South American officials will gather.

Lincoln Beachy has been in Porto Rico for the past week, flying at San Juan. His engagement here opened on December 7, with a crowd of 5,000 people. The attendance increased steadily throughout the meet.

FRENCH MILITARY TESTS ENDED

Paris, November 27.—Yesterday morning the wind was blowing only about 10 miles an hour at the military aerodrome at Rheims, and despite a dense fog, it was decided to start the participants in the third and final test of the *concours*. The results of the 300-kilometer (186.3 miles) runs from Rheims to Amiens and back, gave one Nieuport monoplane, two Breguet biplanes, three H. Farman biplanes and one Savary biplane positions in the final classification.

Classified according to speed, the successful pilots finished in the following order: Weymann, in a 100-horsepower (Gnome) Nieuport, 2 hours 30 minutes; Moineau, 140-horsepower (Gnome) Breguet, 3 hours 7 minutes; Bregt, 100-horsepower (Gnome) Breguet, 3 hours 26 minutes; Fischer, 100-horsepower (Gnome) H. Farman, 3 hours 40 minutes; Barra, 60-horsepower (Renault) Farman, 3 hours 59 minutes; Renaux, 60-horsepower (Renault) H. Farman, 4 hours 5 minutes; Frantz, 75-horsepower (Labor-Aviation) Savary, 4 hours 24 minutes. These machines had all been passed for the other tests and were merely required to show a speed of about 35 miles an hour, stops included, to fulfill the specifications.

Prevost (Deperdussin), who was lost in the fog, returned to Rheims and made a second start. It is possible that his time will be accepted, in which case he will take third place in the above classification.

Weymann showed an average running time for the 186.3 miles, of 72 miles an hour, Moineau 59 miles an hour, Prevost (whose time may not be official) 54 miles an hour, and Bregt 54 miles an hour.

FOWLER HEADING FOR NEW ORLEANS

Beaumont, Tex., December 10.—R. G. Fowler was detained here today by rain. He expects to leave about 11 o'clock tomorrow morning for Lake Charles, La.

The Aero Club Italiano opened its rooms at 135 West Twelfth street, New York, Saturday, December 9. The ceremonies began at 8:30 in the evening.

SAN RAFAEL, CAL., BOOMED FOR NEW AERO CENTER

San Francisco, November 28.—The Aeronautical Corporation, of which Murray C. Tunison is manager, and John R. Steele of Los Angeles, secretary, has been organized at San Rafael, Cal., for the purpose of building aeroplanes and aeroplane motors. The company has acquired a tract of land for a factory, and plans are being drafted for the buildings which it is expected will be under construction within a short time.

While the company is organized primarily to manufacture aeroplanes and motors, its plans include the establishment of one of the most advanced aeroplane centers in the United States. A large area of ground has been selected as a flying field, and it is proposed to establish a school, build hangars and give exhibitions; in fact, to do everything possible to advance aviation.

A distinct innovation in the company's plans is the fact that the money to be made in the enterprise is expected to come from the manufacturing and school end, and that no charges will be made for hangars or other privileges on the field. The company announces that it will welcome the advent of any other factory, and will go to the extent of finding ground for such an enterprise at a reasonable cost.

Arrangements have been made with a local hostelry in San Rafael for the best of accommodations for aviators at the minimum price of \$1 a day, and the fact is especially emphasized that anything like the usual "velvet" charges against men who fly will not be tolerated in any way. In short, the people of San Rafael co-operating with the promoters of the new company, have expressed a desire to have the birdmen of the country winter with them, and are willing to do all in their power to make things agreeable.

The company is planning a large clubhouse for aviators and mechanicians, which will have pleasant reading rooms and a dining room, on the grounds. Hangars will be made weather-proof, so that watchmen who stay with the machines will be comfortable in all degrees of weather.

The advent of the new enterprise, which lacks entirely the usual stock-peddling features of the average company, will be a great benefit to northern California. Heretofore it has been almost an impossibility to promote a successful meet in the vicinity of San Francisco on account of the prevailing trade winds, which rendered air navigation dangerous. For the same reason this city has lacked the usual get-together spirit among the amateur aviators, and although there are more than 150 machines under construction or completed, only three or four have been tested in any way. The land which the Aeronautical Corporation has laid out for a flying field is guarded on the ocean side by high mountains, which divert the trade winds, so that ideal flying weather prevails at all times during the day on at least 350 days of the year.

As the company asks no fees from amateurs, or professionals either, for that matter, there is little doubt that the new field will be popular from the start and will prove a meeting place for many promising novices who have heretofore been discouraged on account of the lack of proper facilities for the trying out of their machines. It is expected that the field will be open for flights soon after December 1.

COOK AND MASSON DO MUCH FLYING

San Francisco, Cal., December 5.—Weldon B. Cook, the amateur, who came into prominence recently from Black Diamond, Cal., has just put in one of the busiest weeks heretofore credited to an amateur aviator.

On November 30, Cook assembled his Curtiss-type biplane at Stockton, and, after a brief tryout, flew direct to the residence of his grandmother at Lockport, a distance of 21 miles, giving that excellent lady her first sight of an aeroplane. Circling the house he landed in a nearby field, and, after a short visit with his relative, returned to the fair grounds at Stockton.

On the day before Cook made a 20-minute flight at the Stockton fair grounds, and attained an altitude of 3,000 feet. Later in the same day he stayed in the air one hour, circling around at the same altitude as on his previous flight.

On Sunday, December 3, Cook and Didier Masson were the attractions at the automobile meet at the motordome at Elmhurst. Cook has installed a four-cylinder two-cycle Roberts motor giving him a horsepower of 55 units, and on Sunday

essayed a race with an automobile. The track being a half mile one, however, he was unable to make a showing against his competitor on account of his inability to negotiate the curves quickly enough. On this date Cook gave an exhibition flight, attaining an altitude of 2,700 feet.

Masson made a long flight the same day, in a Curtiss machine equipped with a Gnome power plant and attained an altitude of 3,000 feet.

RODGERS COMPLETES LONG JOURNEY

Los Angeles, Cal., December 10.—Calbraith P. Rodgers went over the last 20 miles of his journey from sea to sea today, landing on the Strand at Long Beach, in the presence of thousands of people, who had gathered to see the end of

CAL. P. ROGERS AND FRIENDS BEFORE THE START

his trip. Frank Champion, in a Bleriot monoplane, and Beryl Williams, in a Curtiss-type, flew out to meet the pathfinder and returned to the field, flanking him in picturesque fashion. Rodgers intends to dismantle his machine tomorrow and ship it to San Francisco, where he has contracted to make a number of flights.

TAKES COUPLE ON HONEYMOON TRIP

San Francisco, December 5.—Albert Bosquet, and his wife, formerly Miss Reaga Shearley, were treated to a unique experience at San Jose, Cal., on Thanksgiving Day, when they were taken for a short trip in the aeroplane of Roy Francis, who is visiting relatives in that city. Francis, who flies a Gage biplane with Hall-Scott engine, hearing of the marriage of the happy couple, sought to complete their joy on their wedding day by giving them a ride, such as they never before experienced.

Francis is one of the few Northern California aviators who is making good with very little red fire. A former automobile enthusiast, Francis had his attention called to an opportunity to buy an aeroplane cheap. Instead of grasping the opportunity at once he set about to investigate aviation, and, coming in contact with an aviation school in the southern part of the state decided to learn to navigate an aeroplane before buying. He was so successful in learning that he reappeared in San Antonio recently with his new biplane and power plant complete, and has not sought any date, contenting himself with practice flights at the Presidio and in his home city.

Orver Myerhoffer, the Oroville amateur, has gone into business for himself, and with E. H. Thompson, formerly of the

California Aero Manufacturing and Supply Company, is operating under the name of the California Aeronautical Company, with headquarters at 743 Gough street, San Francisco.

The boys have received business from the start, and are working on a Curtiss-type biplane to the order of Miss Margaret Murphy, of San Francisco. They are also building a number of gliders, for which they have recently received orders.

The new firm has received the agency for Roberts aviation motors in and about San Francisco, and already has one sale to its credit.

Albert S. Frye has taken a hangar at the Presidio, of San Francisco, and is practicing with a Curtiss-type biplane, equipped with a McDermott motor.

Frank Bryant, who is billed to fill dates under the management of the De Vaux aviators, is making trial flights with a standard Bleriot monoplane and Anzani power plant on the Alameda, Cal., marshes. The machine is the property of J. C. McTarnahan, of San Francisco, and was recently purchased by him from Clarence Walker.

QUEEN WINTER SCHOOL LOCATED

Pasadena, Cal., December 2.—Ladis Lawkowitz, of the Queen Monoplane Company, has decided to locate the winter school, to be maintained by that company, near this city. The training grounds he has chosen are located within a few minutes' ride on an electric line from the city, and the field covers 160 acres. Lawkowitz says that, in his judgment, Pasadena is the best city on the coast for flying, because of the very light winds that prevail. His supplies have arrived from the east, but it will be two or three days before they can be sent to the field from Los Angeles. Miss Madeline Bleriot will be the first pupil at the school. Another woman pupil has enrolled and a large number of men are coming from every part of the country to join the class.

MISS MADELINE BLERIOT, QUEEN SCHOOL PUPIL.

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NEW CORPORATIONS

National Aeroplane Company, Chicago, Ill., November 25; to manufacture and sell aeroplanes, give exhibitions and instruction. Capital \$10,000. Incorporators, Howard Linn, W. S. Linn, E. M. Spates.

AVIATOR AND BUILDER

While Puccini and Strauss are very slow in deciding to write an aviation opera, the aeroplane is not lacking representation in the popular music of the day. Three recent songs based on the sensation of flying are, "Come Josephine, in My Flying Machine," "The Bird Man," and "Spooning in My Aeroplane." The last mentioned was written for James R. Mills of the Mills aviators by Aubrey Stauffer and the Erdman Brothers of Chicago, and it may well be predicted a success.

The Curtiss aviators will fly at Columbus, Ga., as soon as the details and dates can be arranged. The Driving park at Columbus has for a starting ground a one-mile track, surrounded by a park of 16 acres. The grand stand has a seating capacity of 4,000, while there are 500 bleacher seats in addition.

It is reported that the Toliver dirigible failed to lift in an attempted trial on November 10. The volume of gas was apparently not enough to raise the big ship, and the date of the trial was postponed.

Paul Peck, the Rex Smith biplane operator, is about to close a contract for an engagement at LaGrange, Ga., to take place within the next few weeks. Peck plans to spend the winter in the south flying exhibitions.

Dr. Charles S. Decker, of Binghamton, N. Y., has purchased a Curtiss-type aeroplane. He is president of the aero club in his city, and he also heads the automobile club.

Leon Hewitt and Frank Collins, of Sioux City, Ia., have built and patented a monoplane. Its principles are not known.

Dr. A. R. Silverston, of Milwaukee, Wis., has been granted a German patent, dated September 29, 1908, which is said to cover any flying machine using wheels for starting or alighting, or in which the pendulum system in any of its forms is used to give automatic equilibrium, or any machine which has a chassis or carriage, transverse to the line of flight. Dr. Silverston says that every machine known violates his patent, and it is intimated that some wholesale lawsuits will take place in the next few years.

The plans for the January meet, to be held by the Aero Club of California, at Los Angeles, are not definite as yet. There has been but little flying in the city for the past two weeks.

The Aero Club of Butte (Mont.) has been incorporated with the following directors: E. Lee Edward, R. J. Regan, J. L. Neinesary, M. A. Gamer and William Wier, all of Butte. The purpose of the club is to foster social and intellectual intercourse with relation to aeronautics.

The Dalton Adding Machine Company, of St. Louis, has removed from its old address in the Syndicate Trust Building to 917 Pine street, where it will occupy a roomy ground floor location. Ralph L. Smith, sales manager for Missouri, invites his customers to call, and he further offers to teach the clerks in any establishment how to get the most out of the machine.

Hugh Robinson has been chosen to demonstrate the Curtiss hydroaeroplane sold to the Russian Government. He will travel to Sebastopol, where the demonstration is scheduled to take place in January. The machine is now being tested at the Curtiss factory in Hammondsport.

The Prowse biplane was reported in a recent issue of AERO as having fallen after a short flight, at Hopkinsville Ky., because of motor trouble. The real cause of the accident appears to have been that the woodwork of the machine had been badly damaged in transporting it to Hopkinsville from St. Louis, where it was built. Several of the ribs had been cracked and they broke as soon as the machine was in the air, and the bulging of the cloth made flying impossible. The motor, a Kirkham, was not at fault, and according to Prowse, it has never failed to deliver from 360 to 380 pounds standing thrust.

STARTING ON THE SNOW AT LONG ISLAND FIELDS

Nassau Boulevard Aerodrome, Long Island, December 9.—Some day, perhaps, aeroplanes will be able to rise from the ground without wheels. Last spring at the flying ground of the Burgess Company and Curtis, at Squantum, near Boston, a Burgess-Wright machine rose with its skids alone from the wet grass of the marshes. This week at Nassau Boulevard, instead of being discouraged at the four inches of snow that covered the field, Lester Weeks took advantage of the conditions to make an interesting little experiment. He fastened skids to the Howard Dietz parplane and succeeded in getting the machine off the ground. He found that the snow skids allowed of greater speed on the ground than wheels. Weeks, however, was unable to get up high enough to try the parachute arrangement that is one of the many strange features of this aeroplane. By the way, the Dietz parplane is confounding all the critics, who said it would never get into the air. It has now been taken up on a number of short flights and the Knockers' Club, which has always been a strong organization here, has been silenced. With a more powerful engine, the parplane would probably do many of the things that it was the intention of the designer it should do. Weeks had the parplane out in the snow on Wednesday and Thursday.

The only other aviators out this week were the energetic Fred Schneider and Oliver B. Sherwood, who startled the ground-hogs by making a cross-country flight of 30 miles last week, the first time he took out Ridgley's Church biplane. On Thursday Sherwood took up his first passenger, making several circuits of the field at a height of about 100 feet. Grahame-White, who returned from England on Thursday, paid a visit to the field on Saturday, but did not go up.

Over at Mineola, where Tod Shriver's death cast a heavy gloom, Capt. Baldwin and his band have had a busy time flying for a moving picture concern. The captain, Lee Hammond and Miss Blanche Stuart Scott figured in all sorts of scenes ranging from battles to aerial elopements. The captain, as usual, did all his flying pretty near the ground. "Why don't you go up higher, sometimes?" somebody asked the veteran aviator and aeronaut. "I'm afraid," replied the "Cap." Then came the next question: "How do you know when you are up high enough?" To this Baldwin said: "You see this lump in my throat? Well, when it gets about up to my mouth, I know I am up far enough, and come down." Shortly before dark on Tuesday Frank Boland, in his rudderless biplane, flew around the Mineola field in a high wind.

On Friday Lee Hammond, carrying William Simonson as passenger, introduced a new phase of aeroplane sport by going duck hunting. Simonson is an expert marksman. The pair started away when they saw a flock of wild duck in the distance. Over the village of Hempstead, at a height of 800 feet, Simonson got within range of the ducks and fired. He killed one duck, according to his own story. A youngster below picked it up and ran off with it. Hammond said that the recoil of the gun did not affect the equilibrium of the aeroplane.

EXHIBITS PROMISED NEW YORK AERO SHOW

New York, December 9.—Already it looks as though the aero exhibition, which the Aero Club of America will hold at the Grand Central Palace early next summer, will be one that will compare more than favorably with the annual affairs in Paris and London. New York has never had a real exposition of aeroplanes. Next year's salon will not only show the progress that has been made in aeroplane construction in this country, but will be representative of the best work abroad.

Henry A. Wise Wood, of the working committee of the First Annual Aeronautical Show, reports that as one of the results of Secretary G. F. Campbell Wood's visit to Rome, whither he went to attend the annual conference of the International Aeronautic Federation, the Italian Government will have an official stand at the Grand Central Palace. An effort is also being made to show the three Gordon Bennett cup winning machines. Claude Grahame-White has promised to have sent over the 100-horsepower Gnome-Bleriot with which he won the race at Belmont Park in 1910; Charles Terres Weymann will send over the 100-horsepower Gnome-Nieuport he used in winning back the trophy in England last

summer; and it is almost certain that Glenn H. Curtiss will consent to exhibit the biplane with which he captured the cup at the first Rheims meeting in 1909. Besides being of considerable sentimental and historical value, these three aeroplanes will provide an interesting exhibition of the evolution of the racing machine.

The Wright Company, the Curtiss Aeroplane Company, Burgess Company and Curtis, of Marblehead, Mass., and a number of the makers of motors and accessories in this country have already tentatively promised to show their skill against the manufacturers of France, England and Germany. The aeronautic show committee is made up of the following members of the Aero Club of America:

W. Irving Twombly, chairman; Roger B. Whitman, secretary; A. Holland Forbes, Chas. E. Spratt, Alfred Reeves, E. L. Jones, Chas. de San Marzano, Otis F. Wood, G. F. Campbell Wood, Hy. A. Wise Wood.

The chairman will be pleased to receive suggestions from manufacturers, aviators and others.

MAY TEST GERMAN AERO GUN

New York, December 9.—Major Samuel Reber, Capt. Charles deF. Chandler, Lieut. T. G. Ellyson and other military members of the Aero Club of America, are deeply interested in the new aeroplane gun of Commander Cleland Davis, U. S. N., and with the gun which the Ehrhardt Ordnance Works, of Germany, wishes to supply the United States Navy Department.

Details in regard to the gun of Commander Davis are being kept carefully secret. It is known, however, that the weapon is of three-inch caliber and fires explosive shells. The projectiles carry a charge of powerful high explosive called "dunnite," and on bursting scatter small bullets in all directions. They may be set off by a time fuse or by impact, as desired. The gun is suspended from the flying machine and in practice would be aimed and discharged by a second man, carried as a passenger. An ingenious device of spring and piston takes up the "kick." The recoil, however, does not amount to much, because only a small powder charge has to be used, inasmuch as the projectile requires very little initial velocity.

The German invention, it is claimed, has solved the problem of repelling aeroplane attack. The German weapons, which have been tested before the naval and military attaches of the diplomatic corps of several governments, are different from the type hitherto tried in the United States, in that they do not actually have to hit the aeroplanes to destroy them. Their shells in exploding form a huge pyrotechnic envelope of the frail craft, setting them afire. A supply of these weapons is offered to the United States Navy Department on a royalty basis.

GILL HEADS BURGESS WINTER SCHOOL

Marblehead, Mass., December 9.—Arrangements have been made by the Burgess Company and Curtis, whereby Howard Gill, present holder of the American endurance record, will proceed at once to Los Angeles to take charge of the Burgess winter training station to be opened there not later than December 20.

To make learning to fly easier and more agreeable than it has ever been before, a complete equipment of planes, motors and repair parts were sent out by freight several weeks ago. Among the complete planes sent was one of the new Burgess hydroplanes, equipped with the latest type hydro. Gill has been up to the factory for a week flying the hydro and says that while it is harder to rise, the landing is much easier than on the standard machine.

H. R. Jacobs, of Atchison, Kan., is building a multiplane, which is expected to prove itself automatically stable when tried out in the spring. Tests are being made with small models of the machine by his brothers, Will and Frank Jacobs, who are balloonists and who drop the models from the basket to test their soaring power. W. J. Leighty, of Kansas City, Mo., is also interested in the Jacobs multiplane.

SIMPLICITY IS CHIEF MAXIMOTOR FEATURE

The Maximotor, formerly called the Detroit aeromotor represents a very much simplified form of four-cycle, vertical cylinder, water-cooled aviation motor, which was evidently designed to meet the popular demand for a trustworthy motor at a reasonable price.

The general aspect is compactness and simplicity. The I-head obscures the valves from the casual view, and as the intake manifold is cast into the block cylinders there is really little complication in the carburetion and intake mechanism. The exhaust valves are mechanically operated from a camshaft, located within the crankcase, while the intake valves are automatic. The carburetor cuddles up closely to the

END VIEW
Showing valve arrangement and half-time gears.

cylinders so that the only protrusions are the gears and the spark plugs.

The Maximotor is of five-inch bore and five-inch stroke and the four-cylinder model is rated 40-50-horsepower, at from 1,000 to 1,200 r. p. m. This is a reasonable speed for an aviation motor and gives a very smooth torque. The six-cylinder is of the same bore and stroke and with identically the same construction except for the timing gears of the magneto.

Lubrication is effected by a very simple means. Pipes

carry the oil from the pump in the bottom of the crankcase to the friction surfaces of the cylinders, whence it oils the pistons and drips off from the cylinders, to be churned up by the connecting rods. The splash effected by this action lubricates the wrist pins, connecting-rod bearings and camshaft. The bottom of the crankcase is the reservoir and has one partition in the center. The oil pump is located at the bottom of this partition and draws oil from both compartments alike. The oil pump is of the positive gear-type, driven from the camshaft and is cased in light aluminum. The oil reservoir in the effective tapering base is provided with a sight glass at the side.

The aluminum crankcase is strongly ribbed inside and, as there are but two crankshaft bearings, is very simple indeed. The camshaft drive gear is seen outside the crankcase, as also are the magneto and pump gears. These gears are of bronze and are pinned to the hollow camshaft.

The Mea magneto is at the opposite end from the propeller and is transverse to the shaft of the engine. It is driven directly from the end of the camshaft by bevel gears. The pump is also located at this end of the motor. A gear pump actuates the water circulation.

The cooling of the motor is excellent, largely on account of the great freedom of the exhaust system. Block cylinders for such large bores as five-inch are not usual, but the excellence of these gray iron castings has much to do with cooling efficiency. The combination of a two-inch exhaust valve with auxiliary exhaust bores in the sides of the cylinders, gives easy scavenging. This method of auxiliary relief also greatly lessens the load upon the water-cooling mechanism.

The specifications of the Maximotor crankshaft indicate

great strength, which is, of course, an absolute necessity when the practice of using but two bearings is adopted. This two-bearing crankshaft greatly lessens the number of parts and permits the use of extra large ball bearings at the ends of the

EXHAUST SIDE

crankcase. A great deal of friction is done away with by this system. Doubts have always arisen about the advisability of using a two-bearing crankshaft, but it is significant that many successful automobile manufacturers employ it,

notably the makers of the Chalmers and the Thomas taxi.

The I-head motor is of well recognized merit, and besides aiding in the prevention of mixture of old and new gases, permits easy access to any valve and the possibility of scraping carbon from the piston head without removing the cylinders. The cylinders are bolted to the crankcase with ten studs and the block construction gives a rigidity that can be obtained in no other way.

The intake manifold is cast into the cylinders and is thereby always nicely warmed by the water circulation. This simple manifold has the carbureter connected to it by a short, straight 1½-inch pipe, which means that the passage of gas and air from carbureter to valve is very easy indeed. A 1½-inch Schebler carbureter is standard equipment.

The merit of the automatic intake cannot easily be denied, after the long success of the Wright motor, which has automatic intakes. The Maximotor has very simple automatics that perform perfectly at an astonishingly high rate of speed and give no trouble. Both exhaust and intake valves are of special manufacture, with cast-iron heads in steel stems. This is the best known choice of valve material.

After leaving off a great deal that other manufacturers consider necessary, the Maximotor performs consistently and it is in this that the designer has won his greatest victory. The motor weighs 225 pounds, cools with but 2½ gallons of water, is well lubricated, gets rid of excess oil from the piston heads by way of the exhaust bores and has but four babitted connecting rod bearings and two radial-ball crankshaft bearings with large ¾-inch balls. The gears are all large and well cut and many excellent economies in function are apparent.

CORRESPONDENCE

Queries Briefly Answered

DONALD BROWN, Yorkton, Sask., Can.—It is very difficult accurately to calculate what the strain would be upon a cable 1,000 feet long attached to a 22 by 4½ glider in a 20-mile wind, because it is impossible to foresee all the conditions under which it would be used and in what way. It would be best to be on the safe side, however, and we recommend the use of ¾-inch steel cable, which has a breaking strain of from 5.3 to 7 tons, according to quality. One thousand feet of this size cable would weigh 22 pounds.

E. E. WALTNER, Freeman, S. D.—The Santos-Dumont Demoiselle is neither manufactured nor for sale in the United States. It is probable that the French makers no longer build the type. A number of the aeroplane constructors advertising in AERO will build a copy of the original machine at a fixed price.

N. M. SOWDER, Higginsville, Mo.—William Randolph Hearst, The American, New York, N. Y. (2) Mr. Hearst's offer of a prize for an ocean-to-ocean flight has expired and will not be renewed.

AERO READER—For blue prints required, address advertisers in AERO who sell plans for aeroplanes.

J. FULTS, Pittsburgh, Pa.—If properly constructed, your glider with 124 square feet of surface should support 248 pounds or more. (2) Nothing has been published in AERO in regard to the late Hon. C. S. Rolls, who died several months before the first issue of AERO appeared.

C. G. H., Dorchester, Mass.—The pedaling arrangement, used by Cromwell Dixon, was attached to a dirigible balloon. It is not practical to propel an aeroplane in the same manner.

P. F. Z., Troy, N. Y.—Your question would require more space to answer than we can give. See *Monoplanes and Biplanes*, Chap. IV.

H. J., Hamilton, O.—Try any of the blue print makers advertising in AERO.

W. C. S., Chicago, Ill.—See "How to Build a Curtiss-type Biplane," published in AERO beginning December 31, 1910.

V. B., Norwich, N. Y.—The 22-foot biplane you describe would not get off the ground with a 12-horsepower engine. You would be fortunate to make it fly with 60-horsepower actuating a propeller delivering the maximum thrust obtain-

able. You might do well to use your biplane as a glider. The tail, embodying the horizontal and vertical rudders, should be sufficiently far in rear to balance the weight of the operator when the rudder for fore-and-aft control is in normal position.

Navy Man Watches Gulls Soaring

To the Editor of AERO:

In these days when so many theories are advanced regarding the soaring flights of birds, I think it would be of interest to experimenters to know certain traits of the seagull's movement in soaring flight. It has fallen to my lot, on numerous occasions during my service on board of the fast destroyer Perry, to study these so-called soaring flights of the seagull, which bird always follows the ships—sometimes in great numbers, when we are cruising off the coast.

My theory, which has been formed from observation, is that these birds glide on a downward trend on upward moving air currents. I have never during my several years of service at sea, seen a seagull soar or glide for more than a few hundred yards at the best, without taking a turn of flapping with its wings, especially when flying over the open sea. I have, however, time and time again seen them glide for miles without moving their wings, poised directly over the prow of the ship when it was traveling rapidly against a slight breeze. The explanation of this is very simple to my mind, for the part of the ship above the water line plows through the air and tosses up an aerial wave crest and by keeping in this the bird finds ideal gliding conditions.

This principle is practically the same as that used by the native Hawaiians in their sport of riding in toward the beach on the forward slope of an incoming ocean wave. They frequently attain high speeds, as they are always on a downward glide. To be exact, the smart birds use a small part of the power generated by the burning coals in the furnaces for their easy travel.

I firmly believe that when the fine points of soaring flight are learned it will be proven that it is the sun which furnishes the power which the birds use in soaring. The principle of air expanding under heat is sufficient to explain the

Continued on Page 225.

E. PERCY NOEL, Founder-Editor

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The Editor is pleased to consider MS and photographs for publication, but only material that is likely to prove of interest to the readers of AERO. The Editor cannot undertake to answer technical inquiries except in the columns of AERO.

ON LEARNING HOW

With aviation still in its boyhood, we may say, there are already so many encouraging signs of effort in the right direction, that it is difficult to see how anyone but the confirmed cynic can fail to look upon the situation without enthusiasm. One of the greatest developments to further progress which has shown itself in the past few weeks, is the establishment of more schools.

In these columns we have always argued against the short-sighted policy of individual construction of an aeroplane, for, unless the builder has ample capital or extreme good luck, he is more than likely to meet with failure. The work requires experience in the first place, and if this is not an asset of the builder at the

outset, it will be necessary for him to acquire it expensively, perhaps dangerously. An inexperienced man, no matter how enthusiastic, will find it difficult even to produce a copy of well-tried type of aeroplane at the same cost that he can purchase a machine, constructed in the shops of an experienced manufacturer.

But if one is determined to build his own machine, and we must admit that scores of successful aeroplanes have been produced by makers of little experience during the past year, there is no question about the fact that money, time, needless effort and risk can be saved by obtaining instruction in flying from a first-rate teacher before trying to build or to fly the individually-made aeroplane.

Besides the unquestionable importance of knowing how to fly before constructing a machine, which the builder cannot be quite sure is a real flyer until someone who is an aviator tries to fly it, there are other points which the man who has never driven an aeroplane cannot appreciate or imagine beforehand.

In the first place, driving an aeroplane is something that cannot even be approximately imagined. The most graphic description will give to the mind only an inkling, at best, of the actual sensation. This is because it does not lend itself readily to analysis. An experienced aviator will seldom be able to tell you under what exact conditions he moves this or that control and to what extent.

It can readily be seen that the aviator's eighth sense, the feel of the air, or what you may call it, cannot be acquired by word of mouth or from the printed page. It must come with the wind singing in your ears, the earth rushing away underneath—not for a few seconds, but for minutes.

There are many schools now, where the instructors are licensed pilots—no other kind should be considered—and thorough tuition can be obtained. The cost, compared with building an aeroplane, is insignificant, and, if one is determined to build his own machine, the money spent in this way to obtain a pilot's certificate will return a profit of at least 100 per cent on the investment.

Learn how first.

There will be a meeting of the Aero Club of Pennsylvania, in Room C of the Bellevue-Stratford Hotel on Friday, December 15, at eight p. m. The nomination of officers for the year of 1912 will be made at this meeting and the club will vote on an amendment to the by-laws of club, making it a custom to nominate officers at the second meeting. This amendment also makes the provision that the polls shall be open for the election of officers on the day of the annual meeting from four to six, and from seven to nine p. m. E. R. Brown will give a lecture on the "Development of the Hydroaeroplane." The annual meeting will be held January 5, 1912.

AERO wishes to correct a statement in last week's issue to the effect that Rey B. Wheeler, of San Jose, Cal., was attending the Benoist school in St. Louis. The name should read Ray S. Wheeler of Washington, D. C.

The Diary of Flight

MONDAY, NOVEMBER 27.

Marblehead, Mass.—A flight was made over Marblehead harbor by a Burgess-Curtiss operator, carrying a moving picture operator as passenger. The film taken was for the use of the Aviation Film Company.

WEDNESDAY, NOVEMBER 29.

Sockton, Cal.—Weldon B. Cook flew, remaining in the air 20 minutes and attaining an altitude of 3,000 feet.

THURSDAY, NOVEMBER 30.

Greely, Colo.—Fred Norcross is reported to have fallen 200 feet while trying a Curtiss type of his own manufacture. He was not hurt.

San Jose, Cal.—Roy Francis flew, carrying Mr. and Mrs. Alfred Bosquet as passengers.

Sockton, Cal.—Weldon B. Cook flew 21 miles from this city to Lockport in his Curtiss type biplane. He returned late in the afternoon.

FRIDAY, DECEMBER 1.

Blackwell, Okla.—A. K. Longren gave exhibition flights in the morning and afternoon.

Traverse City, Mich.—Vandie Ludwig of Chicago, gave an exhibition, circling the state hospital grounds three times.

SUNDAY, DECEMBER 3.

Wickatunk, N. J.—O. G. Simmons flew, carrying Robert J. Collier.

Elmhurst, Cal.—Weldon B. Cook and Didier Masson flew.

TUESDAY, DECEMBER 5.

Columbus, Miss.—C. F. Walsh flew twice.

Tuscaloosa, Ala.—S. H. Matlack flew, falling and receiving serious injuries. Matlack is from Louisville, Ky., and he was taking the place of H. E. Callahan who had been booked for the flight by a southern agency.

Tupelo, Miss.—Oscar J. Brindley flew. Louis Mitchell flew, remaining in the air 40 minutes on one flight. William Heth flew.

Marblehead, Mass.—C. L. Webster flew, continuing his flights late into the evening with the aid of a full moon. In all he made eight flights.

Kinloch, Mo.—Antony Jannus flew, carrying as passengers Walter De Leon and Miss Muggins Davies, star and leading lady of "The Campus," a musical comedy playing in St. Louis and Miss Minta Durfee and Roscoe Arbuckle of the same company. Jannus also made a 10-minute flight in the old teaching machine, Benoist No. 8. Horace Kearny while attempting to fly back to Kinloch field from Alton, Ill., was forced by a fog to come down about nine miles west of Kinloch.

WEDNESDAY, DECEMBER 6

Tupelo, Miss.—Oscar Brindley flew; Louis Mitchell and William Heth flew.

Marblehead, Mass.—W. Starling Burgess flew, carrying Sam Hathaway, out over the marshes on a duck hunt.

Kinloch, Mo.—Antony Jannus, carrying Horace Kearny as passenger, flew nine miles north to the field in which Kearny had left his machine on the night before. They were compelled to descend once to inquire their location, after which they proceeded to the field and found Kearny's plane intact. After a short rest the aviators climbed into their respective machines and raced back to the field.

THURSDAY, DECEMBER 7.

Tupelo, Miss.—Oscar Brindley, Louis Mitchell and William Heth flew.

Cheyenne, Wyo.—Harold Brinker flew in his 60-horsepower (Roberts) Curtiss-type, circling Frontier park. This is Brinker's first successful exhibition in the machine, which he has been building and testing for some time.

Kinloch, Mo.—Hillery Beachey flew four times, carrying Adolf Shimmel, Otto Shimmel, Alex Ebart and Otto Tine as passengers. The four mentioned are midgets, weighing about 60 pounds apiece.

Antony Jannus flew twice carrying F. Gerrish Gassoway and James W. Wallace, of AERO, as passengers. Fred Hart, a Benoist pupil, flew but made a hard landing and was jolted out of the machine. He was not hurt. Horace Kearny flew, totaling one and one-half hours in the air.

FRIDAY, DECEMBER 8.

Marblehead, Mass.—Eleven flights were made by pupils at the Burgess school.

Wickatunk, N. J.—O. G. Simmons flew twice, carrying William Manna and Miss H. Thompson as passengers.

Kinloch, Mo.—Horace Kearny and Antony Jannus flew.

SATURDAY, DECEMBER 9.

Marblehead, Mass.—Harry N. Atwood, on behalf of the Clayton and Craig Schools took the delivery of the first of his Burgess hydroaeroplanes.

Kinloch, Mo.—Antony Jannus made three passenger-carrying flights with students of the Benoist school. Horace Kearny made flights in a new Benoist machine. Hillery Beachey flew in a new Heiman-Beachey biplane, making two circles of the field.

SUNDAY, DECEMBER 10.

Kinloch, Mo.—Antony Jannus flew, carrying Ray S. Wheeler as a passenger. Horace Kearny flew carrying W. Gentry of the Boulevard Engine Company and Alfred Boulet.

AMERICAN AVIATORS BOOKED WELL

Memphis, Tenn., December 4.—The American Aviators, Inc., of Memphis, left today on their inaugural tour. Proud of the fact that Memphis was the first city in the south to boast of an aviation entourage, newspapers as well as prominent citizens of the city were hearty in wishing Louie Mitchell, the president of the corporation, and his bird-men, success. Mitchell is confident that the future aviation from an exhibition standpoint is still promising. He has invested \$20,000 in machines and his two Wright standards are the prettiest planes ever flown in Memphis.

Mitchell, his staff and his machines, are traveling in two special cars. These cars were purchased outright by the American Aviators, Inc., at Atlanta a month ago, but owing to alterations necessary to accommodate the machines, they were delivered only the morning before the departure of the company.

Oscar A. Brindley reported to the Memphis office of the American company Sunday and immediately went to Tupelo, where exhibitions were given Tuesday, Wednesday and Thursday. Tuesday Mitchell made three flights. His longest time in the air was 40 minutes. He carried one passenger.

Wednesday Mitchell and Heath were in the air. Thursday brought the meet to a close with flying that eclipsed even that of the two previous days.

The American Aviators will fly at West Point, Miss., December 8 and 9; from West Point to Canton for flights, December 12 and 13, and then to Yazoo City, where they will fly December 15 and 16.

"There's money in the aviation game, and the man that quits now finds that he has cut off his nose to spite his face," is Mitchell's view of the present situation.

HAMILTON CO. BUILDING HYDROS

Seattle, Wash., December 7.—After a year of quiet experimenting the Hamilton Aero Manufacturing Company, of this city, is about to place a new line of aeroplanes on the market. The Hamilton models include a biplane along conventional lines, a new tractor screw biplane, a monoplane and a hydro-aeroplane. The hydroaeroplane is equipped with a propeller developed by the company called a hydroaeropropeller, which is said to be especially adaptable to this kind of work. The water experiments will be dropped soon for the winter, but in the spring the company intends to specialize on the hydro-aeroplane and its propeller.

Aero Club of Saint Louis

Temporary Office: 19 South Broadway, St. Louis

E. Percy Noel, Secretary

GOOD WEATHER FAVORS KINLOCH FLYING

Kinloch, Mo., December 11.—Under ideal weather conditions, the past week's flying at Kinloch consisted principally in passenger-carrying, 14 people being carried, exclusive of a number of instruction flights in which pupils of the Benoist school figured. Antony Jannus did most of the bus work, although Hillery Beachey contributed his share when he carried four midgets, members of a vaudeville sketch, on Tuesday. Horace F. Kearny flew back from Alton in his Hall-Scott-motored Benoist plane, making the trip in two days.

The best flying was on Tuesday, when Antony Jannus, in the Benoist No. 6, carried four members of the theatrical company playing "The Campus" in St. Louis, on short flights of from 7 to 12 minutes each. Walter De Leon, leading man, was the first to fly, and after him came Miss Muggins Davies, Miss Minta Durfee and Roscoe Arbuckle. After this Jannus took the old school machine, Benoist No. 8, which has lately been equipped with a Boulevard six-cylinder motor, out for a 10-minute flight.

Horace F. Kearny was to have returned to Kinloch from Alton by air line on Tuesday, but he started late in the afternoon and was compelled to descend in a field nine miles north of the park, when he encountered a fog. He left the machine in the field all night. On Wednesday, Jannus flew off with Kearny as passenger in the No. 6 to find the biplane. They failed to locate the machine at first, so they descended and inquired at a farm house. Learning that it was a mile north of them, they took to the air and hastened to where the machine stood, surrounded by a group of people. They rested a few minutes, and then each climbed into his machine and they had a race to the field, which Kearny won.

On Thursday, Jannus made two flights of about eight minutes each carrying F. Gerrish Gassoway on the first and James W. Wallace, of AERO on the second. He also made a 12-minute demonstration for a prospective customer. Kearny made three flights, one of them lasting 15 minutes. Hillery Beachey made several flights during the afternoon, carrying Otto Schimmel, Adolf Schimmel, Alex Ebart and Otto Tine as passengers at different times. While this was going on A. B. Lambert appeared on the field to watch the flying.

One of the Schimmel brothers, after looking at him very closely for a moment, said:

"You are Mr. Lambert of the Aero Club of St. Louis."

Lambert was somewhat surprised.

"How did you know that?" he asked.

Schimmel, who speaks with a marked German accent, replied:

"Your picture was on the front page of a copy of AERO which we purchased in Albany, N. Y."

Frederick Hart, one of the Benoist pupils, essayed a flight alone toward the end of the day. He lost control when about 20 feet in the air, on his descent, and came to the earth with a severe jolt. He was thrown from the machine, but he jumped up almost immediately and caught the biplane, which was running wild under power, bringing it to a stop.

On Saturday and Sunday, Jannus made passenger-carrying flights with pupils of the school, among them Ray S. Wheeler, of Washington, D. C. Horace Kearny with a new Benoist, and Hillery Beachey with the new Heimann-Beachey biplane made flights on Saturday and Sunday.

Mrs. Lillian Janeway Atwater, formerly the widow of Senator Platt, now the wife of William B. Atwater, will be a Curtiss pupil during the winter. She decided to learn flying on the hydroaeroplane, because of the greater safety, after which she will take up the piloting of a standard Curtiss machine. Her husband is already enrolled at the school and has been at work for some time at the North Island field. The couple met Curtiss on the way to San Diego, while they were on their honeymoon.



1,009,048, November 21, 1911.—Peter P. Carmichael, Dah-lonega, Ga. A helicopter including a frame, elevating wheels thereabove and arranged in series along the sides thereof, the wheels of the two series being disposed in pairs, and being extended beyond the sides of the frame, and wind shields disposed in front of the wheels of each pair, said wheels extending laterally beyond the shields.

1,009,157, November 21, 1911.—George Lehberger, Newark, N. J. A flying machine comprising a frame, a supporting plane mounted on the top of said frame, a pair of planes extending outwardly from each side of said frame, and being partially overlapped by the supporting plane, a car supported from said frame, and connections controlled from said car, whereby the outer edges of said pair of planes may be simultaneously flexed to the same extent in opposite directions.

1,009,200, November 21, 1911.—Wallace E. Tillinghast, Worcester, Mass. An aeroplane, comprising a main lifting plane, an auxiliary plane pivotally mounted back from its advancing edge above each end of said main plane at a distance therefrom and extending as a whole at an angle to the adjacent end of the main plane, and means under the control of the operator for increasing the angle of incidence of one of said auxiliary planes and simultaneously decreasing the angle of incidence of the other auxiliary plane for establishing the horizontal position of the aeroplane.

1,009,274, November 21, 1911.—John C. Ayling, Springfield, Ill. A kite comprising frame sticks, means for pivotally connecting said sticks in radiating crossing relation, a body, cord sections inclosed by the edges thereof and having portions projecting through the corners of said body and detachably engaging the ends of said sticks, and reinforcing strips overlapping the corners of said body.

1,009,384, November 21, 1911.—Francis A. Craig, Carmichaels, Pa. A flying machine embodying a main plane, lateral stabilizing planes connected thereto, a belt arranged to move said planes simultaneously, a crank connected to one stretch of said belt, a spindle to which said crank is connected, a standard in which said spindle is journaled, a hand lever connected to the spindle, and oppositely acting contractile springs connected to the hand lever and to the standard.

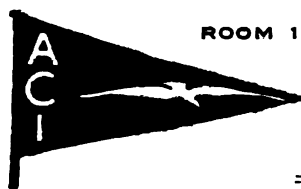
1,009,692, November 21, 1911.—Rene Louis Riout, Paris, France. A flying machine comprising with the body of the machine the wings consisting of a hollow front frame member and one fixed longitudinal frame member near the body, and of a certain number of frame members articulated to said front frame member, springs located in the hollow front frame member for maintaining the articulated longitudinal frame members in their normal position, the mechanism for effecting the flapping motion of the wings consisting of a crank shaft driven from the engine and having its cranks displaced at 180 degrees the one with regard to the other, connecting rods hinged with the one end to said cranks and the other end to the fixed arms of the wings so that the two connecting rods always act in opposite directions, stops for the articulated longitudinal frame members of the wings to limit the deformation of the wings through the resistance of the air.

1,009,766, November 28, 1911.—Aceph B. Mayes, Houston, Texas. A safety parachute comprising a plurality of telescoping members and a parachute arranged on each of said members.

1,009,770, November 28, 1911.—Colin B. McKenzie, Chicago, Ill. A flying machine including a main frame having upper and lower longitudinal members, oscillatory supporting planes pivoted to said upper members and extending laterally therefrom, an engine on said frame and propellers driven thereby, drums releasably connected with the engine shaft, operative connections between said drums and said planes for moving the latter forwardly, and means for oscillating said planes simultaneously with the forward movement thereof.

Continued on page 224

THE AERO CLUB OF ILLINOIS



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ROOM 130, THE AUDITORIUM
CHICAGO

FLYING FIELD
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BULLETIN

To the Members of the Club:

The third special meeting of the Aero Club of Illinois, winter series, will not be called until the first of the new year, owing to the holiday season, but look for definite announcement here in issue of December 23.

The opening session of the club's special series at the Auditorium Hotel, December 5, overflowed the usual quarters, necessitating the use of the great hotel parlor on the same floor with the club suite, and was entirely satisfactory as an opener in attendance and enthusiasm.

The treasurer, Mr. Bartley, as chairman pro tem, in the absence of the president and both vice-presidents, ably conducted the business on hand and statements of the condition of aviation prospects and club affairs, viewed from many angles, were made by several of the officers and prominent members.

Constructive criticism is urgently requested, as a means of showing where and how improvement in local affairs can well be made, and deserve popular approval. We are gradually and certainly shaping up into good working form. Our plans are being laid for progressive improvement to extend far beyond the present season. The wise and able counsel of the capable men connected with the movement and the backing up by the enthusiasm of every individual member, are called for now and will long be necessary. Each man's co-operation in the directions now being marked out can have only one result—success for the movement.

The second special meeting of the club, called for Friday, December 15, and including a dinner, addresses and picture illustrations of live interest, will undoubtedly be the means of getting practically every club member within reach, and many prospective members pledged to the work before us to the full capacity of each individual. The outline adopted at the time will be reported more in detail in the following bulletin.

AERO CLUB OF AMERICA NOTICES

NEW PILOTS' LICENSES.

At the meeting of the board of governors, held on November 23, John H. Worden was granted aviation pilot's license No. 76.

At the meetings of the board of governors held on October 18 and November 8, spherical balloon pilot's licenses No. 43 and 44 were granted Maj. Samuel Reber, U. S. A., and John J. Van Valkenburgh, respectively.

ANNUAL DINNER, JANUARY 27.

Hon. William H. Taft, President of the United States, has accepted an invitation to be a guest at the annual dinner of the Aero Club of America, to be held on the evening of Saturday, January 27, 1912.

NEW COMMITTEES NAMED.

Executive Committee—

Robert J. Collier, Chairman,
James A. Blair, Jr., Vice-Chairman,
Samuel Reber,

Chas. Jerome Edwards,
W. W. Miller,
C. E. Knoblauch,
Henry A. Wise Wood.

Finance Committee—

Chas. Jerome Edwards, Chairman,
Henry A. Wise Wood,
James A. Blair, Jr.,
Allan A. Ryan,
C. H. Sabin,
George F. Baker, Jr.,
Charles E. Knoblauch.

Admissions Committee—

F. L. V. Hoppin, Chairman,
Nicholas F. Brady,
Robert G. McGann,
James King Duffy,
William E. Coffin.

Law Committee—

William W. Miller, Chairman,
Lyttleton Fox,
John Quinn,
Thomas A. Hill,
J. Norris Miller.

Foreign Relations Committee—

Henry A. Wise Wood, Chairman,
Cortlandt F. Bishop,
Dave Hennen Morris,
Hart O. Berg,
Frank S. Lahm,
Harold F. McCormick,
Roland R. Conklin,
George T. Wilson.

Committee on Aerodynamics and Aerology—

A. F. Zahm, Chairman,
Henry B. Hersey,
A. Lawrence Rotch,
M. B. Sellers.

Committee on Dirigible Balloons—

Cortlandt F. Bishop, Chairman.
T. S. Baldwin,
H. B. Wild,
Frank S. Lahm.

Library Committee—

G. F. Campbell Wood, Chairman,
A. W. Lawson,
E. L. Jones,
E. Percy Noel,
John Barry Ryan.

House Committee—

Charles E. Knoblauch, Chairman.
William F. Whitehouse,
Ernestus Gulick,
W. D. Gash,
R. M. La Montagne,
Arthur Johns.

Contest Committee—

Samuel Reber, Chairman,
Charles M. Manly,
W. Redmond Cross,
Henry A. Wise Wood,
Charles deF. Chandler,
Frank X. Mudd,
Walter Camp,
George M. Myers.

Committee on Affiliated Clubs—

James E. Plew, Chairman,
Timothy L. Woodruff,
George M. Myers,
J. Wesley Bovee,
Lawrence Rotch,
Jerome H. Joyce,
Charles J. Glidden.

Grievance Committee—

Dave H. Morris, Chairman,
W. W. Niles,
Samuel H. Valentine.

Technical Committee—

Charles M. Manly, Chairman,
Phillip P. Dodge,
Charles A. Munn,

W. Irving Twombly,
 Roger B. Whitman,
 David Todd,
 J. A. D. McCurdy,
 Grover C. Loening,
 Starling Burgess,
 August Post,
 John C. Eberhardt.

Committee on Spherical Balloons—

A. R. Hawley, Chairman,
 J. C. McCoy,
 A. B. Lambert,
 J. H. Wade, Jr.,
 George N. Myers.

Auditing Committee—

George M. Kirkner, Chairman,
 Walter T. Rosen,
 Major A. White.

Committee on Licensed Aviators—

W. Redmond Cross, Chairman,
 Chas. deF. Chandler,
 T. G. Ellyson,
 J. A. D. McCurdy.

Entertainment Committee—

James A. Blair, Jr., Chairman,
 C. J. Edwards,
 A. R. Hawley,
 R. A. C. Smith,
 C. E. Knoblauch,
 Charles E. Miner.

RECENT UNITED STATES AERO PATENTS

Continued from page 222

1,009,996, November 28, 1911.—George Riffard, New York, N. Y. A construction of aeroplane frames or bodies or other skeleton structures, comprising chords, vertically disposed stanchions between said chords, horizontally disposed stretchers between said chords, yoke-bolts, a portion of each yoke-bolt passing through adjacent ends of a stanchion and a stretcher as the same about a chord, and a portion of each yoke-bolt extending along the exterior of said chords, a binder-plate connected with each yoke-bolt, and nuts for securing said binder-plates in place.

1,010,076, November 28, 1911.—Joseph Rosenberg and Ruc-container having compartments therein, means for individually filling and controlling the contents of the compartments, a plurality of inverted U-shaped hoops secured circumferentially around the container and depending below the same, one over each of the partitions separating the compartments, and operating mechanism supported on the ends of the hoops beneath the container.

1,010,324, November 28, 1911.—Josiah Sparks, University Place, Neb. A flying machine embodying a pair of planes spaced one above the other, a plurality of propellers carried thereby, a source of power for said propellers, a shaft extending longitudinally of the upper plane and rotatably mounted thereon, wings pivotally carried on the ends of said shaft, and means to raise and lower said wings, a portion of said means being also adapted to rotate said shaft.

1,010,374, November 28, 1911.—Hugo Kardos, New York, N. Y., assignor of one-half to A. J. Moisant, of same place; Arpad A. Kremer and Ladislaus von Kevicsky, New York County, N. Y., administrators of said Hugo Kardos, deceased. A flying machine comprising a supporting frame, stationary and adjustable stern planes supported from said frame, a propeller arranged at the stern of the machine and supported from the frame, means whereby the adjustable stern planes are shifted, bow planes supported from the main frame, oscillatory intermediate planes, means for pivotally supporting and angularly adjusting said intermediate planes, said means supported by said frame, and means for oscillating said intermediate planes.

1,009,855, November 28, 1911.—Attilio Pusterla, Fort Wadsworth, N. Y., assignor of one-half to Samuel Schenkein, New York, N. Y. A flying machine comprising a frame, a main sustaining member thereon, wings pivotally connected with the ends of the sustaining member, a two-armed level mounted on the axis of each wing, a shaft journaled between and parallel to the wing axes, a two-armed lever fixed on said

shaft, stays connecting the ends of said two-armed levers, a depending lever fixed on said shaft adapted to swing in a plane at right angles to the direction of flight, and a seat support hinged to the depending lever adapted to swing in a plane at right angles to the plane of movement of the depending lever, said frame comprising a brace-rod which constitutes a foot support whereby the movements of the seat is under the control of the aviator.

1,009,915, November 28, 1911.—Arthur McLean, New York, N. Y. A flying machine embodying a screw propeller on a rotating shaft, the screw blade comprising multiple convolutions around the shaft, said screw blade of uniform width throughout its length, and a second screw propeller around the said propeller with uniform blades, the outside propeller having a wide base and a uniform taper to its outer end, and means for revolving the two propellers in reverse directions.

1,010,443, December 5, 1911.—Simon B. Minnich, Landisville, Pa. A flying machine embodying a main frame, a platform having brace rods and provided with ground wheels suitably suspended from said frame, transverse parallel propeller shafts mounted upon said frame, propellers provided with a series of blades adapted to open and close placed at right-angles to each other, suitably secured upon said shafts, a sleeve provided with a cam mounted upon said shaft for opening and closing said blades, lever connected to said sleeve, hand operating levers mounted upon said frame, and rods connecting said sleeve operating lever to said hand levers for timing the opening and shutting of said blades.

1,010,483, December 5, 1911.—Survile J. De Lan, Glenwood Springs, Colo. A dirigible airship comprising a pair of gas reservoirs spaced apart, and a housing having a lower closed chamber suspended between the reservoirs, the lower chamber adapted to contain the machinery used in propelling, steering the craft, and for transportation purposes, the housing having an upper chamber open from end to end, between the roof and floor, in order to utilize the current of air passing through the upper chamber to aid in sustaining the craft on the aeroplane principle.

1,011,106, December 5, 1911.—Alexander Graham Bell, Washington, D. C.; Frederick W. Baldwin, Toronto, Ontario; John A. Douglas McCurdy, Baddeck, Nova Scotia, Canada; Glenn H. Curtiss, Hammondsport, N. Y., and Edward A. Selfridge, San Francisco, Cal., administrators of Thomas E. Selfridge, deceased, assignors to Charles J. Bell, trustee, Washington, D. C. A flying machine embodying a supporting surface having a positive angle of incidence, a pair of lateral balancing rudders, one on each side of the medial fore and aft line of the structure and each of said rudders normally having a zero angle of incidence, and connections between said rudders whereby one is adjusted to a positive and the other to a negative angle of incidence.

Note.—Above patent covers the Curtiss-type aileron control. The claims are as follows.

1. In a flying machine, the combination of a supporting surface having a positive angle of incidence, a pair of lateral balancing rudders, one on each side of the medial fore and aft line of the structure and each of said rudders normally having a zero angle of incidence and connections between said rudders.

2. In a flying machine, the combination of a supporting surface having a positive angle of incidence, a pair of lateral balancing rudders, one on each side of the medial fore and aft line of the structure, and each of said rudders normally having a zero angle of incidence, and connections between said rudders whereby one is adjusted to a positive and the other to a negative angle of incidence.

3. In a flying machine, the combination of a supporting surface having a positive angle of incidence, a pair of lateral balancing rudders, one on each side of the medial fore and aft line of the structure, and each of said rudders normally having a zero angle of incidence, and means for simultaneously adjusting said rudders, the one to a positive and the other to a negative angle of incidence.

4. In a flying machine, the combination of a pair of suitably spaced supporting surfaces having a positive angle of incidence, means uniting said supporting surfaces, and a pair of horizontal balancing rudders normally having a zero angle of incidence and arranged one on each side of the medial fore and aft line of the structure and connections between said rudders.

5. In a flying machine, the combination of a pair of suitably spaced supporting surfaces having a positive angle of incidence, means uniting said supporting surfaces, a pair of horizontal balancing rudders normally having a zero angle of incidence and arranged one on each side of the medial fore and aft line of the structure, and connections between said rudders whereby one is adjusted to a positive and the other to a negative angle of incidence.

6. In a flying machine, the combination of a supporting surface having a positive angle of incidence, a pair of lateral balancing

ing rudders, one arranged on either side of the medial fore and aft line of the machine, means normally supporting said lateral balancing rudders at a zero angle of incidence, and means operating to shift said balancing rudders to equal and opposite angles of incidence.

7. In a flying machine, the combination of a supporting surface having a positive angle of incidence, a pair of lateral balancing rudders, one arranged on either side of the medial fore and aft line of the machine, means normally supporting said lateral balancing rudders at a zero angle of incidence, and means operating to simultaneously shift said balancing rudders to equal and opposite angles of incidence.

8. In a flying machine, the combination of a supporting surface having a positive angle of incidence, a pair of lateral balancing rudders, one arranged on either side of the medial fore and aft line of the machine, connections between said balancing rudders, means normally supporting said lateral rudders at a zero angle of incidence, and means operating to shift said balancing rudders to equal and opposite angles of incidence.

9. In a flying machine, the combination of a plurality of supporting surfaces having a positive angle of incidence, means uniting said supporting surfaces, and a pair of horizontal balancing rudders, one on each side of the medial fore and aft line of the structure and each mounted outside of the lateral marginal extremities of said supporting surfaces and having normally a zero angle of incidence.

10. In a flying machine, the combination of a pair of suitably spaced supporting surfaces having a positive angle of incidence, means uniting said supporting surfaces, and a pair of horizontal balancing rudders normally having a zero angle of incidence, one on each side of the medial fore and aft line of the structure, and each of said rudders being mounted outside of the lateral marginal lines of said supporting surfaces and on an axis transverse to the line of flight.

11. In a flying machine, the combination of a pair of suitably spaced supporting surfaces having a positive angle of incidence, means uniting said supporting surfaces, a lateral balancing rudder normally having a zero angle of incidence and mounted on an axis transverse to the line of flight on each side of the medial fore and aft line of the structure, and means inclining the said rudder on one side of the structure at a positive angle of incidence and the rudder on the opposite side of the structure at a negative angle of incidence.

12. In a flying machine, the combination of a plurality of suitably spaced supporting surfaces having a positive angle of incidence, means uniting said supporting surfaces, a pair of lateral balancing rudders, one on each side of the medial fore and aft line of the structure, and each of said rudders normally having a zero angle of incidence, and a single controlling lever operatively connected to both of said rudders.

13. In a flying machine, the combination of a plurality of suitably spaced supporting surfaces having a positive angle of incidence, means uniting said supporting surfaces, a pair of lateral balancing rudders, one on each side of the medial fore and aft line of the structure and outside of the marginal extremities of said supporting surfaces and each of said rudders normally having a zero angle of incidence, and a single controlling lever operatively connected to both of said rudders.

14. In a flying machine, the combination of a plurality of suitably spaced supporting surfaces having a positive angle of incidence, means uniting said supporting surfaces, a pair of lateral balancing rudders, one on each side of the medial fore and aft line of the structure and each of said rudders normally having a zero angle of incidence, and a single controlling lever operatively connected to both of said rudders and having a part in operative relation with the person of the aviator.

15. In a flying machine, the combination of a plurality of suitably spaced supporting surfaces having a positive angle of incidence, means uniting said supporting surfaces, a pair of lateral balancing rudders, one on each side of the medial fore and aft line of the structure and outside of the marginal extremities of said supporting surfaces and each of said rudders normally having a zero angle of incidence, and a single controlling lever operatively connected to both of said rudders and having a part in operative relation with the person of the aviator.

16. In a flying machine, the combination of a plurality of suitably spaced supporting surfaces having a positive angle of incidence, means uniting said supporting surfaces, a pair of lateral balancing rudders, one on each side of the medial fore and aft line of the structure and each of said rudders normally having a zero angle of incidence, and a controlling lever operatively connected to both of said rudders and having a part embracing the body of the aviator.

17. In a flying machine, the combination of a plurality of suitably spaced supporting surfaces having a positive angle of incidence, means uniting said supporting surfaces, a pair of lateral balancing rudders, one on each side of the medial fore and aft line of the structure and outside of the marginal extremities of said supporting surfaces, and each of said rudders normally having a zero angle of incidence, and a controlling lever operatively connected to both of said rudders and having a part embracing the body of the aviator.

18. In a flying machine, the combination of a plurality of suitably spaced supporting surfaces having a positive angle of incidence, a member projecting outside of the lateral marginal line of said surfaces, a rudder fulcrumed to each of said projecting members and normally having a zero angle of incidence, and means for operating said rudders.

19. In a flying machine, the combination of a pair of superposed supporting surfaces having a positive angle of incidence, means uniting said supporting surfaces into a rigid non-flexing structure, a pair of lateral balancing rudders normally having a zero angle of incidence and one on each side of the medial fore and aft line of the structure, means connecting said rudders together whereby a movement of one imparts a reverse movement to the other, and operating means connected to both of said rudders.

20. In a flying machine, the combination of a pair of superposed supporting surfaces having a positive angle of incidence, means uniting said supporting surfaces into a rigid non-flexing structure, a pair of lateral balancing rudders normally having a zero angle of incidence, one on each side of the medial fore and aft line of the structure and outside of the marginal extremities of said supporting surfaces, means connecting said rudders together whereby a movement of one imparts a reverse movement to the other, and operating means connected to both of said rudders.

21. In a flying machine, the combination of a pair of suitably spaced supporting surfaces having a positive angle of incidence and means uniting the same, a pair of lateral balancing rudders normally having a zero angle of incidence, one on each side of the medial fore and aft line of the structure, means for operating said lateral rudders, an elevating and depressing device, and means for operating said device.

22. In a flying machine, the combination of a supporting surface, a pair of lateral balancing rudders, one on each side of the medial fore and aft line of the structure, an elevating and depressing device, a steering rudder, a shaft mounted to move longitudinally and operatively connected to said elevating and depressing device, a member mounted on said shaft and connected to said steering rudder, and means for operating said balancing rudders.

23. In a flying machine, the combination of a chassis mounted on wheels one of which is a steering wheel, an aerodrome mounted on said chassis, a steering rudder, an elevating and depressing device, a longitudinally movable shaft, a steering element mounted on said shaft and means operatively connecting said element to said steering rudder and steering wheel, and operative connections between said shaft and said elevating and depressing device.

24. In a flying machine, the combination of an aerodrome having a positive angle of incidence and two lateral balancing rudders normally having a zero angle of incidence, one on each side of the medial fore and aft line of the machine and pivotally supported on the outside of the lateral marginal lines thereof, and means automatically operated by the body movements of the aviator and operatively connected to said balancing rudders.

25. In a flying machine, the combination of a pair of superposed supporting surfaces having a positive angle of incidence, means uniting said supporting surfaces into a rigid non-flexing structure, a lateral balancing rudder normally having a zero angle of incidence on each side of the medial fore and aft line of the structure and mounted to turn on an axis substantially parallel to the longitudinal axis of the machine, and means connecting said rudders whereby a movement of one imparts a reverse movement to the other, and operating means connected to both of said rudders.

26. In a flying machine, the combination of a plurality of suitably spaced supporting surfaces having a positive angle of incidence, a member projecting outside of the lateral marginal extremities of each of said surfaces and in line with the front marginal edge thereof, a rudder fulcrumed to each of said projecting members, and means for operating said rudders.

27. In a flying machine, the combination of a plurality of suitably spaced supporting surfaces having a positive angle of incidence, means uniting said supporting surfaces, a pair of lateral balancing rudders, one on each side of the medial fore and aft line of the structure, and each of said rudders normally having a zero angle of incidence, and connections between said rudders whereby one is adjusted to a positive and the other to a negative angle of incidence.

28. In a flying machine, the combination of a plurality of suitably spaced supporting surfaces having a positive angle of incidence, means uniting said supporting surfaces, a pair of lateral balancing rudders, one on each side of the medial fore and aft line of the structure, and each of said rudders normally having a zero angle of incidence, and means for simultaneously adjusting said rudders the one to a positive and the other to a negative angle of incidence.

CORRESPONDENCE

Continued from page 219

phenomenon alone. I have often observed that when the air cools after sunset the belated seagulls who have delayed making for their roosting places are forced to beat their way with flapping wings, even when flying on a level plane.

H. O. EIANI, C. M. M., U. S. Navy.

A Dual Motor Plan

To the Editor of AERO:

Here is an idea to eliminate the danger to aviators when their motors stop, which may interest some of the readers of AERO. The principle involved is a rotary motor, to which the propeller is attached, coupled directly onto the shaft of a motor of the fixed type.

Except in case of an emergency the fixed motor is used, the rotary motor, which is locked to the shaft, simply acting as a flywheel. In case of the motor stopping the operator throws a lever which releases the rotary motor from its shaft, and at the same time stops the shaft from revolving by some sort of a brake, also makes the necessary changes in ignition, etc.

In theory the inertia of the rotary motor would throw it over the compression and the plane would speed on as if nothing had happened.

L. WILCOXEN.

AERO MART

These Notices Bring Results

ALL WANTS 1c A WORD FOR SALE and FINANCIAL, ETC. 2c A WORD
PAYABLE STRICTLY IN ADVANCE

BOX NUMBERS

If desired, replies may be received at the offices of the Aero Publication Company. Advertisers wishing to take advantage of this convenience will pay 10 cents extra for registration, to cover the cost of forwarding replies.

Notice to Advertisers

Beginning with Vol. III., No. 14, the issue of AERO dated January 6, 1912, rates for advertisements appearing in the AERO MART will be advanced in accordance with the following schedule.

Situations and Wants, 2 cents a word.

For Sale, Financial, Models and Model Supplies,

Patents, etc., 5 cents a word.

Payable strictly in advance.

SITUATIONS VACANT.

AVIATOR—Wanted licensed or experienced monoplane driver. Want aviator to instruct students and give exhibitions. Willing to make contract for six months or a year to right party. Box 339, Doctor Blanchard, Curtis, Neb.

LICENSED AVIATOR—Wanted thoroughly experienced and licensed aviator to act as instructor. State salary and references. Address National Aeroplane Co., 2023 Michigan Ave., Chicago, Ill.

WANTED—Few young men to train for aviators. Construction and actual field practice. \$100 required. Aeroplane, 231 W. Sixty-second Place, Chicago.

SITUATIONS WANTED.

AVIATOR—Expert automobile and racing driver desires to learn the handling of aeroplanes; expert workman. Has had gliding experience. Box 186, Aero, St. Louis.

AVIATOR—Position as aviator with private party having Curtiss-type machine. Have had experience at grass-cutting, hops and one straightaway. Understand repairing of plane. Will make terms with anyone with fair proposition. Box 189, care Aero, St. Louis.

AVIATOR—Young man desires backing or employment. State full particulars with your proposition. Box 178, care Aero, St. Louis.

AVIATOR—Young man, 23 years of age, desires connection with parties requiring a reliable young man to qualify as aviator. Six years' balloon experience, same biplane experience, registered racing driver, hence a thorough knowledge of gas engines. Competent to arrange dates and handle transportation. Will furnish bond. All references. R. V. Morris, 251 Crown St., New Haven, Conn.

ASSISTANT—What individual or factory will give me a chance to obtain experience with motors and engines, during the winter months, with a possibility to take up aviation next spring? University graduate. Address W. Spalter, 985 Third Ave., New York City.

LICENSED AVIATOR—Aero Club of France, Bleriot and Farman flier, is open for position. P. M. S., 965 Elboren Ave., Price Hill, Cincinnati, Ohio.

MISCELLANEOUS WANTS.

FACTORY—Wanted, small factory or shop with facilities for light woodworking, in good manufacturing location; middle west or near New York. Full particulars. Box 2476, Station G, Washington, D. C.

FABRIC—Wanted samples and prices of a fabric fulfilling the following specifications: weight $2\frac{1}{2}$ to 3 oz. per sq. yd.; breaking strength per inch, warp and weft, about 50 lbs.; tearing strength 8 to 10 lbs.; must have no tendency to crack when folded. L. Miller, 4339 Calumet Ave., Chicago, Ill.

MOTOR—Aero motor wanted. Must be cheap for cash. Tegner, 1551 East 27th St., Cleveland, Ohio.

MOEDEBECK HANDBOOK—Wanted, a copy of Moedebeck's Handbook. Will pay \$2.25 for second-hand copy in good condition. Box 200, care Aero, St. Louis, Mo.

MOTOR—Wanted at once one or two second-hand Gnome motors, 50 or 70-horsepower. Address E. J. Romano, 1623 Summit Ave., Seattle, Wash.

FINANCIAL.

AID—Young man, age 19, graduate of first grade high school, furnishing best of references, wishes financial aid to become aviator. Will go into contract if desired to repay more than all money advanced on me while training. I mean business. Box 187, Aero, St. Louis.

PARTNER—Wanted a partner to do experimental work this winter and next summer. If you mean business, write. Box 190, care Aero, St. Louis.

PARTNER—I have a rough model of an entirely new style of monoplane, of low cost, light weight, and automatic stability with feathering paddle wheels, to lift and propel with small power. I want an expert in aircraft model work, who will collaborate with me on shares, in making a presentable model. Box 184, care Aero, St. Louis, Mo.

FOR SALE.

AIRCRAFT SUPPLIES—Aeroplanes for sale and built to order; propellers, models and model stock; Chicago engines; flying models. Chicago Aero Works, H. S. Renton, Prop., 164 N. Wabash Ave., Chicago, Ill.

AIRSHIP—For sale, complete with silk-bag, motor and tent; \$300 f. o. b. Seattle. H. P. Vidal & Co., New Westminster, B. C.

BLERIOT—For sale, standard French Bleriot monoplane; Anzani motor. \$1,000 f. o. b. San Francisco. Address 630 Van Ness Avenue, San Francisco, Cal.

BIPLANE—For sale biplane 32-foot \$200; 20-foot biplane gliders \$20 and \$30. John Frier, 5833 Julian Ave., St. Louis.

BIPLANE—For sale 30-foot Curtiss-type biplane, complete except power, \$250. Highest class professional workmanship. Absolutely best grade materials and accessories. Special demountability and other features, eliminating lacing of fabric. Guaranteed to fly. Carr Aeroplane Co., Sioux Falls, South Dakota.

FRAME—For sale main frame for Curtiss standard plane complete. All nicely finished. Reason, dissolving partnership. Jack Nevins, 1634 Blue Island Ave., Chicago, Ill.

GLIDERS—You ought to own a glider. Guaranteed flyers of all types to fit every purpose and pocketbook. Send for interesting glider photo and our special winter offers. The Rockrimmon Aircraft Co., 1932 Riverdale St., Chicopee, Mass.

HE THAT BUYS a motor which flies is indeed very wise. If you don't know of the Cellulose Turbine ask others. If they don't know ask us. Ready for the propeller. Only $\frac{1}{2}$ -pound \$2.00 post-paid. The Co-Operative Aero Association, Muncie, Ind.

MOTOR—For sale Elbridge 30-45-horsepower motor, G. & A. carbureter, El Arco radiators and propeller. Good as new. \$500. Box 191, care Aero, St. Louis.

MOTOR—100-horsepower Emerson motor for sale, price \$850. This motor is probably the most perfect machine ever turned out by this company, has been run about four hours. Can be inspected in New York City. Address C. O. Hadley, Tarrytown, N. Y.

When writing to advertisers, please mention AERO, the first weekly.

Directory of Aviators

HARRY N. ATWOOD

(Burgess Wright.)

Address: Clayton & Craig Aviation School, 15 Harcourt St., Boston.

RENE BARRIER(Gnome Driven
Queen Monoplane.)

Address: Care Queen Aeroplane Co., 71 Broadway or Fort George Park, New York City.

MORTIMER F. BATES(Gnome Driven
Moisant Monoplane)

Care: The Moisant International Aviators, Winfield, L. I.

HILLERY BEACHEYBeachey-Heimann Biplane
(Now Booking)

Address: 1122 Washington Avenue, St. Louis, Mo.

TOM W. BENOIST

(Biplane.)

Permanent address: 6664 Delmar Ave., St. Louis.

L. W. BONNEY(Wright Flyer)
Now Booking.

Management Wm. "Jim" Gabriel. Open for exhibitions or cross country flights. Perm. address: 803 Missouri Trust Bldg., St. Louis

JOHN D. COOPER(Pine Biplane.)
Licensed Pilot

Address: 801 Fullerton Bldg., St. Louis.

THE CURTISS AVIATORS(Curtiss Biplanes.)
Now Booking.

Jerome S. Fanciulli, Mgr. Ex. Dept., 1737 Broadway, N. Y.

DE VAUX AVIATORSNow Booking
(Curtiss Biplane)

Address: 66 Fulton St., San Francisco; 942 S. Grand Ave., Los Angeles.

HOWARD GILLPilot's License No. 31
Holds American Endurance Record

Address: AERO, St. Louis.

C. GRAHAME-WHITE

(Nieuport and Bleriot.)

Address: Grahame-White Aviation Co., Ltd., London Aerodrome Hendon, England.

LADIS LEWKOWICZ(Gnome Driven
Queen Monoplane)

Address: Care Queen Aeroplane Co., 71 Broadway or Fort George Park, New York City.

EARLE L. OVINGTON(70-H. P. Gnome-driven
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Winner Globe \$10,000 Tri-State Race.

Permanent Address: Newton Highlands, Mass.

HUGH ROBINSON(Flying the Curtiss Hydra-
aeroplane on land and water.)

Permanent Address: 1737 B'dway, New York; AERO, St. Louis.

RENE SIMON(Gnome Driven
Queen Monoplane.)

Address: Care Queen Aeroplane Co., 71 Broadway or Fort George Park, New York City.

THE WALDEN AVIATORS(Walden
Monoplanes)

Now Booking

Address: The Walden Company, 171 Broadway, New York City

CHARLES F. WALSH

(Curtiss Biplane.)

Permanent Address: 1737 Broadway, N. Y.

HORACE B. WILDLicensed Pilot. Expert on all
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PREPARING FOR BIG LOS ANGELES MEETING

Los Angeles, Cal., December 13.—Plans to hold a big aviation meet in this city, about the middle of January, are being formed rapidly now, and Dick Ferris, who promoted and managed the first international meet held here in 1910, has been chosen to manage the affair. An aerial postoffice on the field will be one of the features of this year's flying, and in order to add to its reality Los Angeles is planning to have a special stamp with the image of an aeroplane upon it. It is hoped that the stamp will be adopted as a standard for aerial mail.

The aviation experts in the city met today and drew up a tentative program for the meet. It is announced that money will not be wanting for the prize list, and that the awards will be made as large as possible, with extra large sums for broken world's records. Details of the meet will be made public as soon as possible.

♦ ♦ ♦

R. R. Young, who recently returned from a trip to Mexico,

where he managed Charles F. Willard and J. A. D. McCurdy, has returned to the Curtiss company, which he will represent in Los Angeles during the coming meet. Upon arriving in Los Angeles, Young announced that he was about to give up aviation, but Glenn H. Curtiss offered to reinstate him as manager for the Curtiss company, during a visit to the San Diego camp.

Young tells a story of a narrow escape for Willard while they were flying at one of the smaller towns in Mexico. Business was bad all through Mexico because of the internal trouble, and at this particular town the anti-American feeling seemed rather high. While Willard was circling about over a mine near the edge of the place a man came out of the shaft with a .38 caliber gun in his hand and deliberately aiming at the aviator, fired three shots. One struck near the hub of the propeller, shattering the blade.

Willard shut off his motor and succeeded in gliding safely to the ground. The man was not apprehended.

CURTISS PUPILS AND FLIERS AT SAN DIEGO—Left to right, W. B. Atwater, H. J. Mayo, A. B. McCally, Lieut. J. B. McClaskey, R. C. St. Henry, William Hoff, W. H. Fisher, Chas. Shoemaker (behind motor), J. Bailey.

to the Rodeo Club, where they waited until the aviator was in sight before arising to accompany him to the field. Champion returned to Dominguez after dropping his letters.

After arising from a field south of Compton, Rodgers circled about until he passed almost exactly over the spot where he fell on November 12. He made his start at 3:30 and found the weather conditions perfect all the way to the sea-coast. After flying about one-half of a mile out over the water he returned to the shore and landed with the wheels of his machine almost touching the surf of the Pacific. The ceremony of running the machine into the water was gone through with a few moments later.

Philip O. Parmelee and Clifford Turpin, who have been in Los Angeles for some time, will leave tonight for the northern part of the state, where they have a number of flying engagements. They will be busy for the next few weeks, but they expect to be able to take part in the Los Angeles meet.

Due to the fact that there are very few Chinese airmen, considerable local interest has been expressed in young Tom Gun, who is taking his first lessons in the art of flying. Before beginning actual flying Gun was connected with Clarence Walker on a part of his travels.

TOM GUN, LEARNING TO FLY AT LOS ANGELES

On December 10, Calbraith P. Rodgers finished his ocean-to-ocean voyage by a 12-mile flight from a point near Compton to Long Beach, Cal., landing at the latter place at 4:04 in the afternoon. His landing was witnessed by a crowd of more than 50,000 persons, which made such frantic efforts to see him after he had landed upon the beach, that scores of people, women among them, were forced knee-deep into the water. The police had a strenuous time in forming a hollow square about the machine.

An unexpected feature of the flight was the welcome extended the transcontinental flier by Frank P. Champion in his Bleriot monoplane and Beryl Williams, who carried as passenger, Earl Dougherty, a student under Williams. The two local aviators drove their machines to meet Rodgers, and accompany him on the last few miles of his flight. Champion, who had flown from Dominguez field, circled over the beach after Rodgers had landed and dropped three copies of a letter for the aviator, which read:

"Congratulations on the completion of your coast-to-coast trip. Best wishes for your continued success."

Beryl Williams, who was using a new machine equipped with tractor screws, hovered above the beach until the crowd had thinned out somewhat and then landed to welcome Rodgers in person. They had flown first from Dominguez field

QUALIFY AT CURTISS WINTER CAMP

San Diego, Cal., December 15.—There is great activity at the Curtiss winter training camp here, and four pupils have qualified for licenses this week. They are Lieut. J. W. McClaskey, United States Marine Corps (retired); S. C. Lewis, Chicago; J. B. McCalley, Harrisburg, Pa., and Charles W. Shoemaker, Olean, N. Y. Among the recent students is Rutherford Page, of New York, a Yale graduate of the class of 1910.

WRIGHTS SUE GRAHAME-WHITE

New York, December 18.—While refraining from discussing the legal aspects of the case, regret has been freely expressed at the Aero Club of America at the action of the Wright company in obtaining an injunction against Claude Grahame-White to restrain him from flying in this country, and in obtaining an order directing him to render an accounting of profits of flying since November 29, 1910. In addition to all this, papers in a second suit have been served on the Englishman. In this the endeavor is made to obtain an accounting of profits made before November 29, 1910. Damages to the amount of \$50,000 are asked.

At the Aero Club it is felt that these suits will have the effect of keeping foreign aviators out of this country. If aviation in the United States wants one thing more than another, it is healthy competition in all branches. The big meet next year that the club is planning for the Gordon-Bennett cup race would be robbed of much of its interest if foreign aviators declined to enter.

Many of the club members are having their own legal troubles with the Wrights, for the Aero Corporation, Alan R. Hawley, president, promoter of the Belmont Park Meet last year, has had a suit brought against it by the Wrights for part of the receipts of the tournament. The case will be tried in the Supreme Court on December 22. The Aero Corporation agreed to pay the Wrights \$10,000 at the beginning of the meet for permission to use machines on which the Wrights claim patent rights, and \$15,000 at the end, after repaying the subscribers. Lack of funds to settle the latter is the reason why the obligation to the Wrights was not met.

Grahame-White's case will first be argued before a referee. He will have to show how far his profits were due to skill, and how far to the invention of the Wrights. At the first Boston meet Grahame-White made between \$30,000 and \$40,000, and at the second about \$5,000. As the Belmont Park Meet was licensed, the Wrights are not suing for profits made there.

Grahame-White recently got back here from England. He has planned to give exhibition flights in San Francisco, Los Angeles and other cities on the coast this winter. He now says he will return to London early in the new year and devote himself to the manufacture of aeroplanes there.

There is still a case by the Wrights against Glenn H. Curtiss pending. Emerson R. Newell, attorney for Curtiss, says that judgment in the Grahame-White case being taken by default would have no application to other pending cases.

MINEOLA IS SEAT OF LONG ISLAND ACTIVITY

E. C. GILLESPIE, OF THE CORNELL AERO CLUB, AT MINEOLA

Mineola, Long Island, December 17.—The first account by an eye witness of the fatal accident to Tod Shriver at Ponce, Porto Rico, recently, was given an AERO correspondent by Peter McLaughlin, who returned to Mineola from the West Indies yesterday. McLaughlin financed Shriver and George Schmitt on the ill-fated flying tour, and saw Shriver fall to his death. Schmitt and Shriver had been using a Baldwin biplane, and on the morning of the accident Schmitt complained that the machine was flying tail-heavy. Tod took the biplane up from the aviation field at Ponce, which is about 40 miles from San Juan, and flew outside the field over a sugar plantation, very low. The cane was about 15 feet high, and in making a turn, Tod caught a wing tip on the growing cane and fell into the plantation. The engine fell on the aviator. Death, however, was due to a sharp piece of cane left in the ground from a previous cutting down of the sugar, penetrating Shriver's heart. McLaughlin will return to the West Indies to fill contracts in San Domingo and Haiti. McLaughlin does not advise other aviators to visit the West Indies. He says there is no money down there. The natives won't pay more than 25 cents to see an aeroplane, and then only once. Harry N. Atwood, with a Burgess-Wright biplane, will probably accompany McLaughlin on his next trip. Capt. Baldwin expects to leave here on Tuesday with Lee Hammond for the Philippines.

Out on the Mineola field there is still an army of busy workers. In the Aeronautical Society's sheds Harry Eno, the Japanese, who during the past year has built and sold three Bleriot and two Farman, is now at work on a hydroaeroplane. The plane will somewhat resemble a Farman. The hydroplanes are 17 feet long, and are the subject of a patent application. Eno recently delivered a biplane to E. C. Gillespie, of the Cornell Aero Club. This plane has a Farman tail, skids and front elevator; a "Baby" Grahame-White control, and has the Elbridge motor set as in the Baldwin "Red Devil." The span is 30 feet and the length over all 26 feet. All the struts and spars are hollow. Of the woodwork only the skids are solid.

Carl Strom has still a faithful band at work on his gigantic passenger-carrying monoplane. During the week the crowd has been largely occupied in fixing the steel framework of the rudder on the all-steel fuselage. Geo. H. Godley expects to try out his own monoplane, in which he has installed a Maximotor engine, in a few days. J. W. Leitenberger, of Johnstown, Pa., who has a Bleriot built by the American Bleriot Company, and who recently moved here, will be out next week.

At the old aero club end of the field preparations are being made by the Molsant Aviation School people to move their monoplanes and machinery to their new field over on Hempstead Plains. In Harry Harkness' hangar J. E. Kiley is

assembling the biplane in which he flew at San Diego, Cal., last winter.

Things would be very dead at the Nassau Boulevard Aerodrome, were it not for Oliver B. Sherwood, who, by his daring flights in a Church biplane with a 50-horsepower six-cylinder Kirkham, has practically caused the disbandment of the Knockers' Club. Sherwood is now flying every day. One afternoon he ascended to a height of about 2,000 feet. Zoilo Garcia, of San Domingo, a civil engineer, who is trying to interest his government in aviation, has a polyplane of his own design, and built by the American Aeroplane Supply House. Garcia has been persuaded to remove the "poly" part of the business, and when the job is finished should have an effective monoplane. Fred Schneider manages to get out nearly every day.

T. O. M. Sopwith, who got back from England last Monday, remained in the country just long enough to order the shipping of his Gnome-Burgess-Wright and 100-horsepower Bleriot, and sailed for home again on Saturday.

Stephen Eason, the inventor of the so-called Dietz paraplane, continues to put in a lot of work on his pet, and is as convinced as ever that with a good motor, his contrivance could make a prolonged flight.

CUP DEFENSE COMMITTEE NAMED

New York, December 18.—In spite of the fact that the suits by the Wrights against Claude Grahame-White may have the effect of keeping aviators out of this country, hereafter, the Aero Club of America is actively engaged in making preparations for the defense of the *Coupe Internationale d'Aviation* in this country next year. On Friday the following defense committee was appointed: James A. Blair, Jr., chairman; D. Redmond Cross, Harold F. McCormick, Henry A. Wise Wood and Cortlandt Field Bishop.

Word is expected any day from Geo. F. Campbell Wood, one of the American delegates to the recent conference in Rome of the International Aeronautic Federation as to the conditions for the 1912 race. It is known, however, that the conditions have not been much changed. Instead of 150 kilometres (87 miles), the distance will be 200 kilometres (117 miles).

Challenges may be received by the Aero Club of America under the rules of the trophy from the aero clubs of other countries at any time before March 1 next. America has twice won the cup, the first time in 1909, when Glenn Curtiss captured it, and again this year, when it fell to Charles T. Weymann, in England. To become owner of the cup a club must win three consecutive years.

It is the only aviation paper, in my estimation.—P. B. Bussey, College Station, Tex.

\$1000 PRIZE MOTOR CONTEST BEGINS

New York, December 9.—The motor contest for a prize of \$1,000, offered by the Automobile Club of America, is now in progress, with 16 motors entered. So far only two have been tested and it is expected that some two or three months will elapse before the club will publish the final results of the contest. That nothing will be made public with regard to the performance of the motors until the contest has been completed has been definitely announced by the contest committee. The chief examiner of the motors is Herbert Chase, who is working under the direction of the technical committee of the club.

It is the intention of the committee to test one motor each four working days in the mechanical laboratory of the club. The machine used to measure the power developed is what is generally known as a "cradle-type" electrical dynamometer. It was built especially for the Automobile club by the Diehl Manufacturing Company and is a modification of the Diehl-type, K 10, electric motor. It shows the most approved design of all the various types of brakes used in testing motors.

The whole apparatus is housed in a large blower, which is connected to the outside and supplies cool air at a speed of 50 miles miles per hour, allowing the motor to be run under the same cooling conditions obtained in actual flight.

The rules for the competition allow each contestant three days for setting up and preliminary testing before the final run, which covers a period of three hours, during which the engine must operate without stop and must also deliver a certain average horsepower.

Several of the motors entered at first have been withdrawn. The final list of entrants stands as follows:

Albatros.	6 cylinders
Anzani.	5 cylinders
Cooke Revolving	2 cylinders
A-M.	6 cylinders
Gnome.	7 cylinders
Ithaca.	4 cylinders
Detroit Aeromotor	2 cylinders
H. L. F. Trebert "Comet"	6 cylinders
H. Harriman Aero Motor	4 cylinders
Roberts.	6 cylinders
Renault.	8 cylinders
Requa.	8 cylinders
Kirkham.	6 cylinders
Maximotor.	4 cylinders
Wright.	4 cylinders
Willard.	8 cylinders

Tests covering four days of the Wright brothers' aeroplane motor have been completed in the Automobile Club of America laboratory. Wilbur Wright demonstrated the machine during these tests, which were made by Herbert Chase under the direction of the technical committee of the club. The motor is now in use on the Wright biplane. Results of trials will not be announced until the competition has been completed. This is the first trial in the \$1,000 prize contest, entries for which closed September 10, last.

The Wright motor is of the four-cycle water-cooled type, having four cylinders of 4½-inch bore by four-inch stroke. It is rated at 30 to 35-horsepower.

To approach as nearly as possible the conditions during the flight, the motor was operated during the tests in a current of air, moving 45 to 50 miles an hour, supplied by a fan.

Tests included a three hours' endurance run at constant speed, starting from a standstill, and again while the engine was turning over slowly. Other tests were made to determine reliability, flexibility, fuel economy, power, freedom from vibration and lubrication efficiency. Other contestants will be tested in the following order: Albatros, six cylinders; Anzani, five cylinders; Cooke Revolver, two cylinders; A-M, six cylinders.

It will be some time before the award can be announced, for the tests will cover some weeks. It is anticipated that good results will be brought out of the contest in improving the aeroplane motor.

R. Russell Shaw, another flier at the Speedway, circled the field last week in his Shaw No. 4. He claims that he is the first to circle the Speedway in an Indianapolis built machine. He intends to try for his pilot's license within a short time.

QUEEN AVIATORS SAIL FROM FRANCE

Paris, December 1.—Charles Voisin, who will serve as manager to Barrier, Andemars, Simon and Garros, during the voyage that the four aviators are about to commence, made a statement today in regard to the organization of the tour which will include the two Americas.

"Tomorrow at 10 a. m.," he said, "we will embark for Rio Janeiro by way of Cherbourg." The exhibition tour was not organized by me, as has been wrongly reported. It is under the direction of McCormick, proprietor of the Queen Aeroplane Company.

"We will commence exhibiting at Rio Janeiro, going immediately afterwards to Sao Polo, from there to Argentine and Chili. Following this we will proceed to North America, in order to be in New York within three or four months.

"All of our aviators have signed a year's contract. Simon is the only member of the party who will not start with the rest of us. He will join us in about two weeks. Six machines will be at the disposition of the four aviators, three made by the Queen company, the Bleriot with which Garros broke the altitude record of the world, a Nieuport and a Deperdussin. The last three machines are not assigned to any particular aviator, but it is probable that they will be most frequently driven by Garros.

"Over there we will take part in all the races that can be organized. Garros has carefully taken with him an official registering barometer, and it is almost certain that he will attack the height mark again. Our aviators are allowed, under the terms of their contract, to return to France to fly in the big events of the year. In America we expect to be joined by some other aviators here and there.

"In fact, we will copy the Moisant team's methods, but in a different way. We will make the tour normally and, above all, economically. No special trains, but just what is necessary for our four aviators, and we hope in this way to make a good success."

CLAYTON AND CRAIG WANT SAUGUS TRACK

Saugus, Mass., December 11.—A crowded special meeting of the board of trade tonight heard the plans of James B. Coughlin and James W. Craig of the Clayton and Craig Aviation School, which is endeavoring to secure the old Saugus racetrack as an aerodrome. The track is admirably situated, being surrounded by marsh land.

Representatives of the school stated that if they could obtain the track under the proper highway and taxation conditions, they would have all their flying done at this field, under the instruction of Harry N. Atwood, who signed a three years' contract with them as their chief instructor.

The school is now conducting a shop course at 15 Harcourt street, Boston, and has purchased outright a Burgess hydro-aeroplane from the Burgess Company & Curtis, another being conditionally ordered. As soon as a definite decision is reached regarding the track, the hydroaeroplane will be flown there by Harry Atwood, passing over Marblehead, Lynn and Saugus.

The board of trade appointed Henry Fiske, Frank Sloan and Horace H. Atherton, Jr., a committee to aid the school. In the course of his remarks, Craig stated that it was the intention of the company to renovate the hotel on the track, to turn the stables into hangars and repair shops, making preparations for 200 students.

The company has arranged to lease the track for the period of one year, with the option of purchase during that time, and will spend at least \$15,000 in the improvements contemplated.

FOWLER MAY NOT VISIT NEW ORLEANS

New Orleans, La., December 15.—An effort is being made to have R. G. Fowler stop here on his way across the continent, but the chances of a cash guarantee are poor, for the wealthy men of this city are not favorably disposed toward aviation. Fowler is now in Beaumont, Tex., facing the law for having gone duck hunting without a license. Charles Young, his manager, who is here now making advance arrangements, says that Fowler will make the trip to this city on Sunday, unless the weather continues unfavorable. It is possible that L. W. Booney will exhibit here with Fowler—if an exhibition can be arranged at all.

ARMY SCHOOL BUSY AT AUGUSTA

Augusta, Ga., December 17.—During the past week the officer aviators at Augusta, Ga., made 31 flights, having a total duration of five hours and 53 minutes. The latter half of the week rain prevented the usual daily flying, except one flight in the rain made by Lieut. Arnold, December 15, especially to try out a new magneto cover, which is intended to protect the magneto from rain-water and consequent short-circuits.

The rain did not prevent a very enjoyable barbecue given to the officers of the aviation school on Saturday, at the Carmichael Club, by Hon. Thomas Barrett, Jr., mayor of Augusta, and several other prominent citizens.

Augusta, Ga., December 11.—The Signal Corps aviation school has been well started for the winter season during the past week. The Wright, Burgess-Wright, and the eight-cylinder Curtiss were assembled and flown, the flying beginning on Thursday, December 7, when all four of the officers made short flights. During the three days of December 7-8-9, the aeroplanes made 13 flights, with a total duration of two hours, 10 minutes. Since the opening of the school the weather has been particularly fine, with clear skies, and the residents of Augusta assert that it is the normal winter condition.

Of special interest were the flights of Lieuts. Kirtland and Arnold. On December 7, Lieut. Kirtland circled the city at a height of 2,500 feet, while on the following day, Lieut. Arnold went out for altitude and reached a height of 4,100 feet. Lieut. Milling also flew well on both days. In addition to being an expert with the Wright machine, Lieut. Milling is now flying very successfully with a Curtiss machine, after a course under Capt. Paul Beck, which began at College Park, Md.

The people in Augusta are just beginning to grasp the fact that the army aviators are daily giving exhibitions similar to those that other cities pay thousands of dollars to see, and as a result the town has gone aviation mad. Visitors flock to the field every day in great numbers. The field is located about one-quarter of a mile from the city on one of the big hay farms which surround Augusta.

NIEUPORT, BREGUET AND DEPERDUSSIN WIN

Paris, December 2.—Although the Farmans won a victory of their own, in that more machines of their manufacture were in the final category than any other, this firm will not win any of the money offered by the French Government for the purchase of machines tested in the recent military trials. This is because speed was the last and definite test. In this the Farmans were well behind the victorious Nieuport, Breguet and Deperdussin.

The allotment of the prize money in purchase of machines to successful firms is as follows:

Ten Nieuport monoplanes at \$8,000 each, \$80,000; speed bonus, at 100 per kilometer in excess of 60 kilometers per hour, \$56,000. Total, \$136,000.

Six Breguet biplanes at \$8,000 each, \$48,000; speed bonus, \$21,000. Total, \$69,000.

Four Deperdussin monoplanes at \$8,000, \$32,000; speed bonus, \$11,600. Total, \$43,600.

Prevost, the Deperdussin pilot, would have taken second place, if his map had not been blown away by the wind, and he, lost in the fog, forced to land.

WOOD GETS FOREIGN EXHIBITS

New York, December 16.—Henry A. Wise Wood, of the committee of the A. C. A. that has charge of the preparation for the aero show in New York early next summer, reports that many promises to exhibit have already been made. Geo. F. Campbell Wood, who is now in Europe on behalf of the club, drumming up foreign manufacturers, has written to Wise Wood, saying that he has met with considerable success in Italy, France and Germany. The preliminary list of exhibitors, both American and foreign, will not be published for several weeks.

In his letter Campbell Wood mentioned that he had been entertained "royally" by the Berlin Aero Club, and that he had made an interesting trip in a Parseval dirigible.

FOREIGN NOTES

BLERIOT BUILT FOR A FRENCH ENTHUSIAST

On December 6, at Etampes, Legagneux flew the Bleriot limousine made for Deutsch de la Meurthe. The initial flight was in the morning. Pleased with the success of the machine, Legagneux made longer flights in the afternoon. The landings were perfect.

* * *

On December 3 Prevost started from the Deperdussin aerodrome, at Courcy, near Rheims, with a passenger aboard the military-type deperdussin, with Gnome motor. He climbed to an altitude of 3,000 meters (9,842.6 feet), in less than 55 minutes. The start was made at 3 p. m., the landing at 4:07 p. m. Beuard, instructor at the Deperdussin school, was the passenger. The record will be official.

At Berlin, on December 5, G. F. Campbell Wood presented to the Imperial Aero Club, the Gordon-Bennett balloon trophy, won last October by Lieut. Hans Gericke. In doing so he said that American pilots would make every possible effort to get it back to the United States next year, while the German club officials stated that they would do all in their power to keep it in Germany.

WILL TEST MEANS' SIGNALLING DEVICE

Marblehead, Mass., December 12.—W. Starling Burgess made two flights in the Burgess hydroaeroplane for the purpose of testing out a new signalling device invented by James Means of Boston. Owing to a loose collar on the lever controlling the valve, the experiments were postponed until repairs could be made.

The device consists of a combination of carbonic acid gas and lampblack. The gas is stored in a small bronze tank about 18 inches long, located on the lower supporting plane. The gas passes through a tube to the chamber of the upper section, situated above the upper supporting plane. As the lever was pulled by its connecting cord, a puff of carbonic acid gas passed through the chamber containing the lampblack, which spread behind the plane in a black puff, visible for a considerable distance.

It is intended that the signals shall be made by long and short puffs, representing the dots and dashes of the Morse telegraphic code. It is believed the messages can be read by the aid of field glasses at a distance of five miles.

One of the humors of hydroplaning was shown later in the day when Phillips W. Page essayed a flight with F. M. Whitehouse of Manchester as passenger. Page shot down the harbor on the water for a considerable distance in order to give his companion the sensation of motorboating. Just as he was about to pull his elevating lever and shoot into the air for the return trip, a splashy wave sent a flood into the magneto, killing the engine. The motorboat quickly reached them, and towed the hydroaeroplane back to the marine railway.

One of the interesting features of the hydroaeroplane is the ease with which it was started while afloat. The launch crept up behind one of the propellers, and a husky mechanic pulled one blade, the hydroplane pulling away from the launch at the first impulse of the motor.

FRENCH CLUB ANALYZES AVIATION ACCIDENTS

It has, of course, long been recognized by the authorities that control the practice of aviation, both that the development of the new science could not proceed without some sacrifice of life and that accidents, and particularly fatal accidents, have been altogether too frequent. The French Aero Club, therefore, appointed a commission to inquire into the accidents that had occurred up to the end of last year and to analyze them as accurately as possible; and the vice-president of this commission, Colonel Bouttineaux, who is director of the French Military Aeronautical Department, has made a valuable and interesting report to the club.

The investigations showed that there had been three fatal accidents in 1909 and 28 in 1910, but that there were only about 200 aeroplanes in the whole world that had actually flown in 1909, while the number had increased to 1,300 a year later. The flights that had been undertaken, too, had increased in difficulty and danger. The speed record in 1908 stood at little more than 40 miles an hour; in 1909 it had risen to nearly 48 miles an hour, and at the end of 1910 it was nearly 68 miles an hour. The height record in 1908 was about 330 feet; in 1909 over 1,500 feet, and in 1910 over 10,000 feet. The greatest duration of flight only amounted to 2 hours 20 minutes, with a distance of 16 miles, in 1908; to 4 hours 17 minutes, with a distance of 144 miles, in 1909, and before the end of 1910 an uninterrupted flight of 8 hours 12 minutes, covering 362 miles, had been made. When the accidents of this year come to be investigated, of course, figures and records even greater than these, with their attendant dangers, will have to be taken into consideration. Cross-country flights, too, had become general between the end of 1909 and the end of 1910, and pilots were no longer prevented from flying by the fact that a strong wind was blowing. In 1908 Wilbur Wright only attempted to ascend at Auvours when there was practically a dead calm, and in the following year, although such feats as those of "Beaumont" and Vedrines in the English circuit still seemed impossible, one stage of the circuit de l'Est was flown in a wind of more than 25 miles an hour. By the end of 1910 more than 300,000 miles had been traveled by aeroplanes, but the 32 fatal accidents that had been recorded only amounted, roughly, to one for every 10,000 miles. These facts, of course, though they do not make the list of casualties any less heavy, show that the increase has been slight in proportion to the development of the new science. There were twice as many accidents of all kinds—98, as compared with 46—in 1910 as there were in 1909, but there were five times as many aeroplanes at work in that year, and there were 20 times as many aviators holding the certificate of the French Aero Club.

The commission at the close of its investigation, came to the conclusion that accidents might fairly be divided into four classes: Those due to faults in aeroplane construction; those due to error on the part of the aviator; those due to atmospheric disturbances; and, lastly, those due to imprudence either of spectators or of aviators, and to incidents that were not likely to recur. The first of these classes comprised 29 per cent of the total number of accidents, and nearly 40 per cent of them were fatal; and the second, 27 per cent, of which more than 21 per cent were fatal. These two classes alone, moreover, accounted for 84 per cent of the total number of fatal accidents. In 1909 there were 14 accidents due to structural faults—whether in design or in workmanship—of which one was fatal; in 1910 there were 29, of which 16 were fatal; and

"errors in pilotage" were responsible for 21 accidents and one death in 1909, and for 21 accidents and eight deaths in 1910. The proportion of deaths to accidents had increased from six per cent in 1909 to 28 per cent in 1910, moreover; and only the greater feats that aviators had found it possible to attempt can be held accountable for this, and, of course, for the fact that accidents due to atmospheric disturbance rose from nine per cent to 25 per cent (of which, however, only two were fatal) of the total number in the period under consideration.

Col. Bouttineaux's report shows that faults in construction have consisted almost entirely in workmanship rather than in design. The commonest accident due to this cause is the breaking of a plane, especially in the case of monoplanes, and the breakage usually occurs at the point at which the wing is joined to the fuselage. These accidents, too, have almost invariably proved either fatal or very serious indeed. Seventeen accidents, of which five were fatal, were due to the failure either of motors or of some portion of the driving mechanism. Broken propellers were responsible for six accidents, and in five of these six cases the propellers were made of metal.

The errors on the part of pilots that caused accidents were, as regards 41 out of a total of 42, due either to an attempt to climb too quickly, whereby forward momentum was sacrificed to such an extent that supporting power was lost, and the machines "sat on their tails," to turning too quickly, or too close to the ground, or to bad landing. Error in turning was the commonest fault, and caused 24 of the 42 accidents, three of them fatal, but the most serious in its results was careless landing, which was responsible for five deaths in a total of eight accidents.

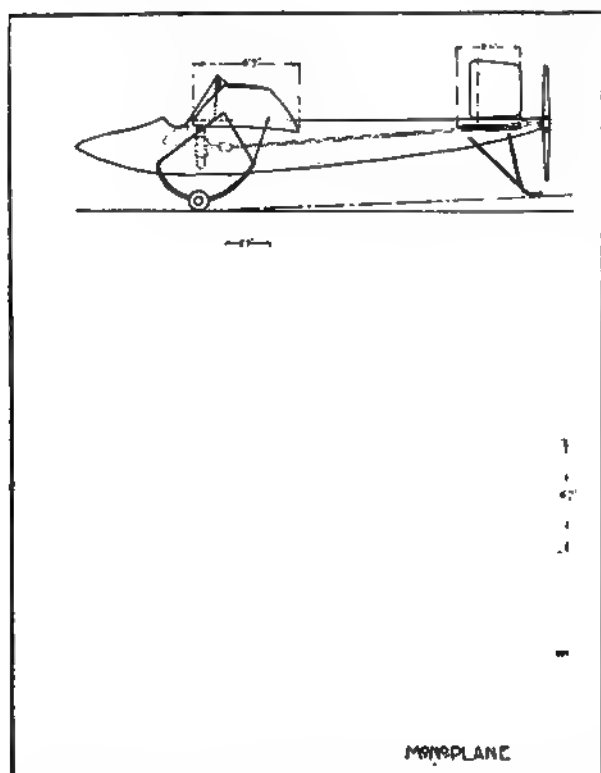
In the hope of diminishing the risk of accidents the commission recommended that aeroplanes should be submitted to official tests and should be approved for use, more or less in the way in which new ships are inspected, passed and classified at Lloyd's, and that the search for some effective device giving automatic stability should be encouraged. With regard to types of aeroplanes and their classification as regards safety, the commission came to no conclusion, but they pointed out that in 1909 and 1910 there had been 61 accidents—ten of them fatal—to the pilots of monoplanes, and 83, of which 21 were fatal, to the pilots of biplanes. The value of these figures was neutralized, though, by recognition of the fact that, in many cases, it might be assumed that the biplanist was a less skillful or less experienced aviator than the monoplane pilot.

There seems to be a widespread interest in England in the recent aviation developments in the United States, and the British Admiralty, sick of experiments with second-hand machines and freaks, is about to try aeroplanes of proven worth. Incidentally, both the military and naval boards are being scored heavily by critics for not adopting a standard machine, and "the Curtiss hydroaeroplane seems most in favor among the critics," writes the British authority.

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It is probable that Hugh Robinson, when he goes to Sebastopol to demonstrate the machine purchased recently by the Russian military authorities, will be instructed to continue his tour throughout Europe in order to show the machine to the military boards of every foreign nation.

PAULHAN-TATIN MONOPLANE IS RADICAL TYPE



In a manner more or less analogous to its direct predecessor, the automobile, the aeroplane is constantly undergoing improvement in order to increase its speed, and, consequently, to ascertain its stability.

The new "Aero-Torpedo," the result of the collaboration of the eminent pioneer Victor Tatin, and the famous pilot-constructor, Louis Paulhan, may be considered as a sincere attempt to realize high speeds by the careful consideration of the reduction of all head resistance to a minimum. Although, by its admittedly novel lines, it strikes a new note in aeroplane design, it is nevertheless a fact that its whole conception was established in the brain of Tatin as long as 20 years ago.

There is no reason why motors of excessively high horsepower should be made use of for the attainment of high speed, nor is it desirable for the furtherance of the aeroplane as a sporting pastime. Rather should the constructors turn their attention to the remedying of those failings which are responsible for such a consumption of power. Head resistance, in this respect, is by far the most important shortcoming that has to be fought against, and we welcome the work of any designer who keeps this consideration foremost in his mind.

The fuselage, which may be termed the backbone that serves to accommodate the pilot and propelling organs, and to which the supporting surfaces are applied, is just over 28 feet in length. As for its shape, it is circular in cross-section throughout and, considering its section along the longitudinal axis, that portion forward of the pilot's seat is elliptical, and the portion aft resembles a right-angled triangle, whose hypotenuse is slightly curved. It is covered from front to rear by fabric, excepting that portion in the vicinity of the engine, which is sheathed by a metallic shield.

This is ventilated in order to admit air for the cooling of the motor—a rotary Gnome of 50-horsepower. The propeller is situated at the extreme rear end of the fuselage, and has a pitch of eight feet. It is connected to the engine by means of a hollow shaft, universally jointed at either end. While opinions differ as to the advisability of utilizing a torque shaft of such length, there is little doubt that by its use the propeller is enabled to work in a position which makes for greatest efficiency. The wings are almost flat, but the little curvature they do possess is of a modified Nieuport-type. Viewed from the front, the wings have the appearance of an ellipse, which has been cut by a line just below and parallel to its major axis. Truss wires taking the weight of the machine in flight are carried from a point near the extremity of each wing to the bottom of the fuselage. There are only two of these trusses to each wing. Wing warping is provided for lateral balance, but as the upturned tips are intended to endow the machine with a sufficient degree of transverse stability, the amount of flexion provided for is extremely limited.

In plan form the wings resemble an ellipse whose ends have been clipped by lines parallel to its minor axis. The tail plane is flat, and purely directional, and its shape is identical with that of the wings. Its span is only 13 feet as opposed to the latter's 28 feet. The rear part of the stabilizer is flexible, and plays the part of elevator. Above this plane is situated the balanced vertical rudder, with which the machine can be steered to right or to left. A long skid, strongly connected to the tail-end of the fuselage by means of four vertical compression struts protects the propeller.

The landing chassis is very unique in its conception, being designed with a view to the cutting down of resistance to forward advance. Two sweeps of wood roughly semi-circular in shape are longitudinally attached to the fuselage by means of hinges in the front, and elastic shock-absorbers in the rear. To these arcs are directly attached the running wheels.

The pilot is seated in a cock pit arranged just in advance of the main wings, from which position he maintains control of the machine by a lever with which the elevation and lateral balance is operated, and a pivoted foot lever with which the steering is effected.

As regards its speed, in the hands of the pilot, Gaudart, who had been engaged to carry out preliminary tests, the machine has attained a velocity of over 80 miles an hour, which for a machine weighing nearly 1,000 lbs., and equipped with a motor of only 50-horsepower, is undoubtedly a very fine performance. The Tatin-Paulhan monoplane has thus in remarkable degree fulfilled the best hopes of its designers, for the machine was originally intended to attain that speed with the engine and propeller with which it is at present provided.



WILL ENTER 1912 SPHERICAL RACE

New York, December 16.—Word has been received from Germany by Robert J. Collier, president of the Aero Club of America, that the Deutscher Luftschiff Verband had decided to hold the 1912 international balloon race at Stuttgart. Alan R. Hawley, chairman of the spherical balloon committee of the club, says America will be represented in the race.

E. PERCY NOEL, Founder-Editor

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The Editor is pleased to consider MS and photographs for publication, but only material that is likely to prove of interest to the readers of Aero. The Editor cannot undertake to answer technical inquiries except in the columns of Aero.

MAKING MOTORS

Although much time and money is wasted in the construction of machines that will not fly, and in badly copying an aeroplane of standard design, that is only one phase of aeronautic work for the novice to guard against. Mechanical enthusiasts with more confidence than experience continue here and there to make mistakes about power plants.

No doubt it is difficult for the mechanic who wishes a power plant for an aeroplane to understand it, but it is none the less true that it is well-nigh impossible to build an aeronautic motor successfully without the entailment of great expense. The entire proposition seems comparatively easy in contemplation, but it is very difficult in actual accomplishment.

The design is conceived in the expert's mind and

it seems all very simple to execute it. Herein lies the fallacy. No engineer has ever been able to produce a gasoline motor successfully the first time he tried. If designers of the highest standing, with every facility of production open to them, are unable to produce a successful motor without the necessity of long and expensive experimentation, how ridiculously egotistical it is for anyone to think that for him it will be easy.

The brothers Seguin worked for three years and spent thousands of dollars before a Gnome was placed on the market. Renault freres, famous for building motor cars and motors for them, spent thousands and devoted two years to the work before they were able to produce the Renault aviation motor. Makers of every other successful aero motor have had the same experience.

To those, with resources at their command, who undertake to produce a new type of aero motor, or a better make of any type now in use, we wish to offer every encouragement, provided the designer realizes the task confronting him and does not consider that his efforts will prove the exception. But unless he is prepared to labor for a long time, to meet many discouragements, to overcome them by skill and strength, his time and money will be wasted.

To the builder of an aeroplane who expects to construct his own motor, or to have it built from his designs by a machine shop, and with this first motor, to fly with any degree of success—judged by the present-day standard—we offer our condolences. We are truly sorry for him. If his plan is to build a motor in order to save the expense of buying one, his case is indeed pitiful.

More and better motors we need, because the limit of development and refinement of the gasoline motor to be used for any purpose has not been reached. Encouragement given to manufacturers and designers means swifter progress. The home-made, or half home-made motor retards progress.



DATES AHEAD

December 21, Nacogdoches, Tex., C. F. Walsh.

NEW CORPORATIONS

Aeroplane Construction and Supply Company, Detroit, Mich. Capital, \$4,000.

The following directions are given visitors to New York to reach the Nassau Boulevard flying field. By train: Pennsylvania station, Seventh avenue and Thirty-third street, to Nassau Boulevard on the Hempstead branch of the Long Island railroad; or Merillon avenue station of main line; or subway to Flatbush avenue station of Long Island railroad to Nassau Boulevard, or Merillon. By motor: Queensboro bridge to Hoffman boulevard to Hillside avenue to Rocky Hill road to Jericho turnpike to Nassau Boulevard.

Activity of Aviator and Builder

F. A. Schaefer, of the importing firm of G. E. Schaefer and Company, Ltd., is stationed in Honolulu and has built a biplane there. The machine is equipped with a Maximotor and is said to be the only aeroplane between San Francisco and Yokohama. Schaefer reports that there is considerable interest expressed in aviation in Honolulu.

Among the recent purchasers of Maximotors are Lewis Matthews, of South Bend, Ind., and George H. Smith, of Long Island. Matthews is promoting an aviation enterprise in addition of his business in the Malleable Stove Works of South Bend, while Smith will use his engine in a Bleriot-type, which he recently purchased from the National Aero Company, of New York.

The Curtiss-type which Roy Wilcox will use while instructing representatives of the Chinese rebel government in flying, was built by Edgard Y. Stewart, of Cleveland, O., from the article published in *AERO*. Wilcox knew Stewart, and had seen the machine and when he was asked to furnish three machines by the Chinese with whom he was dealing, he agreed to furnish two of his own building and told Moy Poy, the leader of the group which bought them, that he would find a bargain in Stewart's flyer. The machine was equipped with Goodyear cloth and wheels and a Roberts 75-horsepower motor. Stewart, in accordance with the request of the Chinese, has changed the machine so that it will carry three persons.

E. W. Schmitt, of Lancaster, Pa., has designed a machine known as the Tri-Vulto-Plane, composed of a central biplane section with wings extending to either side. He claims that the machine will soar down slowly when the motor stops.

H. C. Hansen, Ph. G., a druggist in Seattle, Wash., has made models of two original machines and exhibited them in his window. It is said that they attracted much attention. Hansen has also patented an automatic stability device.

The Maximotor Company, of Detroit, has engaged the services of a celebrated automobile engineer, whose cars are now selling at the rate of several hundred a week. He will co-operate with Maximilian Dingfelder, who designed the Maximotor, in producing light aeronautical motors. While his name is withheld, it is said that he has devoted many years to designing light motors.

Albert S. LeVino, until recently publicity manager of the Moisant International aviators, has left the employ of that company.

The Aerial Navigation Company of America is considering a removal to a larger city than Girard, Kan. A letter has been received by the Commercial Club of Kansas City, Mo., asking information and inducements for locating there.

In Oklahoma City, Okla., Dr. B. H. Dale has built a monoplane which will be tried out shortly in circular flights. It has already been successful in short jumps. It is said to be along the general style of a Demoiselle, with certain improvements conceived by the maker.

Dr. Paul F. Gans, president of the Trans-Atlantic Flight Exposition, announces that if suitable arrangements can be made, when the airship Suchard has made its way across the Atlantic westward from Teneriffe as far as the Barbaboes, he will keep the great dirigible in the air until it reaches the coast of Florida and try to effect a landing at either Miami or Palm Beach.

H. Thaden of Atlanta, Ga., is the inventor of a machine composed of a great number of narrow plane sections, controlled by the rocking wing principle. It is said to have been successful on one short trial, made a few weeks ago.

The Curtiss hydroaeroplane which will be shipped to Russia, is to be demonstrated, the order specifies, before the Grand Duke Alexander Michaelovitch, who is an aviator and a member of the Imperial Aero Club of Russia, at St. Petersburg. Following the order Colonel Naidehoff, a professor in the military engineering academy and president of the aeronautical section of the Imperial Technical Society, delivered a lecture on the Curtiss machines before an audience composed of members of the Russian Aero Club, the Aerial League, a number of aviators and high Russian officials.

Paul Studensky, holding Aero Club of France license No. 292, has been engaged by the National Aeroplane Company of Chicago as instructor for its winter training school which it will open before long in the south. The school grounds have not been selected, but the location is to be decided upon within a week and then the equipment will be shipped south. At first three planes will be used, one a Curtiss-type, with an extra heavy chassis, equipped with a 40-horsepower motor, for practice work, and two Curtiss-types, equipped with six-cylinder Roberts motors. A Farman-type is under construction, which will be furnished with double controls for teaching and with extra seats for passenger carrying.

George Ward, a mechanic, living at Fort Smith, Ark., has made several short flights in a monoplane of his own construction.

La Mar Callicott is trying to organize an aero club in Coldwater, Miss. He will be pleased to hear from everyone who is interested in aeronautics in the vicinity.

The Gilmore Airship Company, of Colfax, Colo., is building two aeroplanes. Both of them, it is asserted, will be ready for trials soon. The company is headed by Lyman Gilmore, and its board of directors is composed of D. E. Matteson, W. H. Morgan, E. H. Armstrong, Leroy Clark and Gilmore, himself.

THE DIARY OF FLIGHT

TUESDAY, DECEMBER 5.

Columbus, Miss.—C. F. Walsh flew.

WEDNESDAY, DECEMBER 6.

Columbus, Miss.—C. F. Walsh flew.

THURSDAY, DECEMBER 7.

Augusta, Ga.—Lieutenants Roy C. Kirtland, H. H. Arnold and T. D. Milling flew. Lieutenant Kirtland circled the city of Augusta.

FRIDAY, DECEMBER 8.

Augusta, Ga.—Lieutenants Roy C. Kirtland, H. H. Arnold and T. D. Milling flew. Lieutenant Arnold attained an altitude of 4,500 feet.

Aberdeen, Miss.—C. F. Walsh flew.

SATURDAY, DECEMBER 9.

Augusta, Ga.—Lieutenants Roy C. Kirtland, H. H. Arnold and T. D. Milling flew.

Aberdeen, Miss.—C. F. Walsh flew.

TUESDAY, DECEMBER 12.

Columbus, Ga.—C. F. Walsh flew, reaching an altitude of 6,500 feet in 30 minutes climbing, on one flight.

WEDNESDAY, DECEMBER 13.

Hammondsport, N. Y.—Hugh Robinson flew testing a new hydroaeroplane and attaining a speed of 74 miles an hour.

Columbus, Ga.—C. F. Walsh flew.

FRIDAY, DECEMBER 15.

Kinloch, Mo.—H. Beachey qualified for license. H. Kearny flew.

SATURDAY, DECEMBER 16.

Kinloch, Mo.—H. Beachey and H. Kearny flew.

Columbus, Ga.—C. F. Walsh flew.

SUNDAY, DECEMBER 17.

Kinloch, Mo.—Antony Jannus and Horace Kearny flew.

MONDAY, DECEMBER 18.

Kinloch, Mo.—Antony Jannus flew 45 minutes.



Temporary Office:
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E. Percy Noel,
Secretary.

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MOTOR BOATMEN SEE BEACHEY QUALIFY

Kinloch, Mo., December 18.—A new name was added to the list of those qualified for a pilot's brevet on Friday, December 15, when Hillery Beachey, in a Hall-Scott motored Heiman-Beachey plane made the necessary flights on Kinloch field. The tests were judged by A. B. Lambert, E. Percy Noel and Grover Hane. Beachey landed more than 150 feet from the mark on completing his first set of figure eights, so that this test was of no value to him. In all, he made three sets of figure eights around the posts 1,600 feet apart, and on both of his successful tests came within 20 feet of the landing mark.

As guests of E. Percy Noel, a number of the prominent exhibitors at the Motor Boat Show, in progress last week at the Coliseum, visited the field during the afternoon with the intention of staying a short time. They became so interested in Beachey's flights, however, that they stayed until dark. John J. Ryan, owner of the remarkable speed boats, Reliance IV and V, expressed particular interest in the flying and said that it was the first time he had ever seen an aeroplane in flight. He now seriously considers taking up the hydroaeroplane for his own sport this summer. Among others present were A. G. Dean, of the Dean Manufacturing Company, and J. W. Sacridier, of the George B. Carpenter Company. Horace Kearny, flying in a Benoist biplane equipped with a Hall-Scott motor, added to the afternoon's entertainment.

NEW BENOIST HEADLESS IS SUCCESSFUL

Kinloch, Mo., December 18.—Yesterday the new Benoist biplane, an original headless type, received its first trial in the hands of Antony Jannus, Benoist school instructor. After two short flights that convinced him of the machine's success, Jannus started the six-cylinder Roberts going for some passenger-carrying teaching. During the afternoon his total duration was 1 hour 50 minutes; six passengers were carried, principally pupils, all of the latter being in the air twice.

Yesterday was also a busy day for Horace Kearny, whose total duration was 1 hour 10 minutes. He contented himself with flying alone, practicing gliding to earth with the eight-cylinder Hall-Scott motor barely turning over. He made one excellent glide from about 1,000 feet altitude, landing nicely on the field.

On Monday Jannus determined to make a duration test, preparatory to making an attempt to break the American endurance record now held by Howard Gill, but he suffered so much with the cold that he has decided to postpone the endurance effort until warmer weather.

Jannus flew 45 minutes. His tank contained seven gallons of gasoline when he started rather late in the afternoon and it was not empty when he was forced down by darkness. He was helped in landing by a fire built on the field.

It is reported that C. L. Young is now manager for L. W. Bonney, in place of William Gabriel, who did most of his book-keeping during the fall.

ORGANIZING BENEVOLENT FUND

New York, December 15.—Incorporation papers have been filed at Albany for the Aeronauts' Fund Association, an organization that it is hoped will be for aviation what the actors' fund is for the theatrical profession. The idea of the association was first conceived among certain members of the Aeronautical Society, and the incorporators include "Bud" Mars, Walter Brookins, Capt. Baldwin and Arnold Kruckman. As soon as the society has been duly incorporated, a board of governors and a secretary will be appointed and some prominent and substantial man invited to act as treasurer. Already arrangements have been made to hold two benefit performances in New York theaters, and a number of aviators have promised to give their services at a big benefit meet early next summer. It is hoped in this and other ways to start a fund that will enable substantial grants to be given to disabled aviators, and to the widows and orphans in case of death. Further particulars may be received from and suggestions received by, the acting secretary, Arnold Kruckman, Aeronautical Society, 250 West Fifty-fourth street, New York.

ROBINSON FLIES 74 MILES AN HOUR

Hammondsport, N. Y., December 13 (By Telegraph).—Hugh Robinson, while testing a new Curtiss hydroaeroplane today, attained a speed of 74 miles per hour. The machine which Robinson is to deliver to the Russian government will be an exact duplicate of this machine.



Illinois Club Personal Paragraphs

You should see the excellent enlargements now hung at the club from photographs made by Frank M. Woodruff, official photographer, and also assistant curator of the Chicago Academy of Sciences.

Messrs. Woodruff and Robbins are arranging with the local meteorological bureau for bright weather soon in which to get more photos of all types of machines and the hangars on the Cicero field. A complete descriptive record of such, including pictures, specifications, performance and history, is to be maintained at the club, and members are herewith asked to supply, at first convenience, any data, past, present or future, which should be available.

Chairman Frank X. Mudd, of the contest committee of the Aero Club of Illinois, announced at the meeting of December 5, that he had been appointed a member of the contest committee of the Aero Club of America, which gives this club direct representation on the governing board of American aeronautics.

Blon J. Arnold, the well-known engineering expert on traction, subway and other public utilities, qualified as a member of the Aero Club, with the universal approval of those present at "the dinner," by relating some phenomena and experiences in connection with the "Dirian fruit," said to be grown somewhere among the South Sea Islands. It has wonderful possibilities in resisting the effect of gravitation, which we will hope to describe more vividly in the near future.

The following cablegram from a well-known member of the Aero Club of Illinois, Captain H. B. Wild, was received from the Grand Salon, Paris, too late to be read at the "Booster Dinner," December 15:

Paris, December 16.

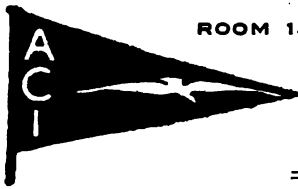
Aero Club,

Auditorium, Chicago.

Grand show. Compliments. Members heart with you.

Ray Harroun, the famous automobile driver, has abandoned active flying for the winter, to devote himself to the perfection of his aeronautical motor. His shops are at the Speedway, Indianapolis, Ind.

THE AERO CLUB OF ILLINOIS



OFFICE
ROOM 130, THE AUDITORIUM
CHICAGO

FLYING FIELD
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TWENTY-SECOND ST.

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Telephone, Harrison 3289 — Use It!

BULLETIN

To the Members of the Club:

On Tuesday, January 9, 1912, at 7:30 p. m., the third special session of the Aero Club of Illinois, winter series, will be convened at the headquarters in the Auditorium Hotel. The business will include reports by captains of the membership squad and review by "Colonel" F. X. Mudd, in addition to engineering discussion relating to the phenomena observed in the gyroscopic demonstration at the "Booster Dinner." It is probable that Thomas Preston Brooke will be present to elucidate difficult points in connection with the subject, and particularly applying to his "Non-Gyro" rotary, hydro-carbon motor. This will precede, by a few days, the election of officers for 1912, which will occur on Tuesday, January 16, to be followed by an inauguration at a time to be stated in the bulletin following the present one.

GROVER F. SEXTON,
Secretary.

To the Members of the Club:

Due to the unexpected large number of members who attended the first "Booster Dinner," given December 15, at the Auditorium office of the club, it has been decided that a programme of technical talks will be given during the winter, probably at weekly luncheons. Others will be given evenings at booster dinners. There are many points about the "why?" of the aeroplane that are not entirely clear to some who are interested in the science, and it is the desire that these points be taken up in the technical talks. Will members write to the secretary, or leave a memorandum at the office, giving ideas which you would like to see explained in lectures, at each of which will be an open discussion in which the points may be straightened out? These will be turned over to Manager Robbins for use in making up his programme. Send in any questions you would like answered, as soon as possible.

It has been suggested that a question box, in this connection, would be a good thing. If members of the club will write out questions concerning the theory of the aeroplane and mark them "For the Question Box," they will be answered in these columns by the aerodynamics committee, the consulting engineer, or others, who have discovered for themselves the points involved.

GROVER F. SEXTON,
Secretary.

Booster Banquet Booms

Chicago, December 17.—It was a distinguished and very enthusiastic gathering of club members and guests which occupied the club dining room in the Auditorium Hotel Friday evening, December 15. A qualitative analysis would show the percentage of active elements to be extraordinarily good. The dozen or so short addresses showed the vigorous action to be expected upon combination of the elements, and the following preparation was agreed to by acclamation: The club members to be divided into squads to be captained by repre-

sentative men and all to report to a colonel of battalion. Upon putting the question as to who would have the necessary "sand" for colonel, F. X. Mudd was elected, and according to President Plew's suggestion, should well bear the title "Col. Sandy Mudd." The captains, including James E. Plew, Charles E. Gregory and Sidney V. James, were called upon to meet at the club for luncheon the following day and select other captains worthy to be associated in the prosecution of the aggressive campaign now inaugurated for the development of the possibilities of the Aero Club of Illinois, beginning with membership and continuing with technical experiments and the promotion of flying contests.

An outline of such features is contained in the communication just issued by H. W. Robbins, business manager of the club, who we may say, incidentally, wishes to have each individual member identify himself with the men who do things, by offering his suggestions personally at headquarters in the Auditorium and by getting well acquainted. The matter of having Wednesday noon table d'hôte and a-la-carte luncheons at the club is to be decided by each man for himself. Call up Harrison 3289, if you can come over at that time, so the necessary covers will be laid.

Ralph Pearson, for several years associated with T. P. Brooke in his gyroscopic experiments, exhibited apparatus which demonstrated before the eyes of the engineers and others gathered at the banquet, the peculiar trajectory which a rotating wheel forces its supporting frame and connected mass to assume when the axis of rotation is suddenly angularly inclined.

Walter O. Runcie, our bioscope expert, showed four thousand feet of film with aeroplanes, dirigible and other subjects, which engrossed the guests till the completion of what may be appropriately described at this time as the biggest and best booster banquet so far held by the Aero Club of Illinois, but which is without doubt to be succeeded by others of even more startling potential possibilities.

Directors Have Meeting

Chicago, December 15.—The board of directors, at its monthly meeting at the club office tonight, transacted the following business:

Appointed a nominations committee to draft a slate of candidates for election to office at the annual meeting, January 16. The committee consists of: E. A. Rumler, Charles L. Sparr, R. E. Ackley, Prof. Wells, Robert G. McGann, Frank Scott, James E. Plew, C. H. Chadwick, Rufus Abbott, T. Edward Wilder.

This committee will meet prior to December 26 and prepare a slate of candidates which will be submitted to the secretary, to be posted on the bulletin board. Later, notice of election will be issued.

Referred the resignations of Messrs. Adams and Grable, tendered in August, to the membership committee for a report.

Empowered the president to act on behalf of the board of directors in appointing an auditing committee, a law committee and such other committees as need develops for.

Tendered a vote of thanks to Walter Runcie for an excellent and instructive exhibition of motion pictures, embracing two "news letter" films and a number covering aviation subjects.

Big Programme Forming

Chicago, December 15.—Manager Harold Robbins of the Aero Club of Illinois, has a big winter's programme forming. Not only that, but he is adding to it all the time, so that members will have to keep their eyes on this page and the office of the club and the field and a score of other places, all the time, to see what's going on.

Now the proposition is, to have members of the club, who have had time to devote to problems in aeronautics, prepare papers which will answer questions in the minds of other members about certain problems, and to read them at meetings of the clubs soon to be held.

After the reading of the paper, an open discussion, in which anyone is at liberty to attempt to controvert the arguments made, will follow.

He also has a plan for weekly luncheons, which he will launch soon, and these will be luncheons "as are luncheons."

Model Aeroplanes

Constructors, designers and fliers of model aeroplanes throughout America are invited to write to the EDITOR of the MODEL AEROPLANE DEPARTMENT, stating their views upon the organization of a national association to govern model contests and promote this important branch of aviation.

Desire To Organize Aero Model Clubs

Persons desiring to organize clubs in their cities, which shall be affiliated with the American Aviation Association, are invited to send their names and addresses to this department. These will be published as below, and others interested may communicate with them. Notices of meetings called for organization, if received in this office not later than Monday of the week during which publication is desired, will be printed in this column.

The following have already expressed a desire to organize local clubs:

At Philadelphia, Pa.—Harold Verity, 2358 N. Woodstock St.
At Schenectady, N. Y.—W. P. Dean, 9 South Church St.
At Haverhill, Mass.—Fletcher Moses, 127 Webster St.

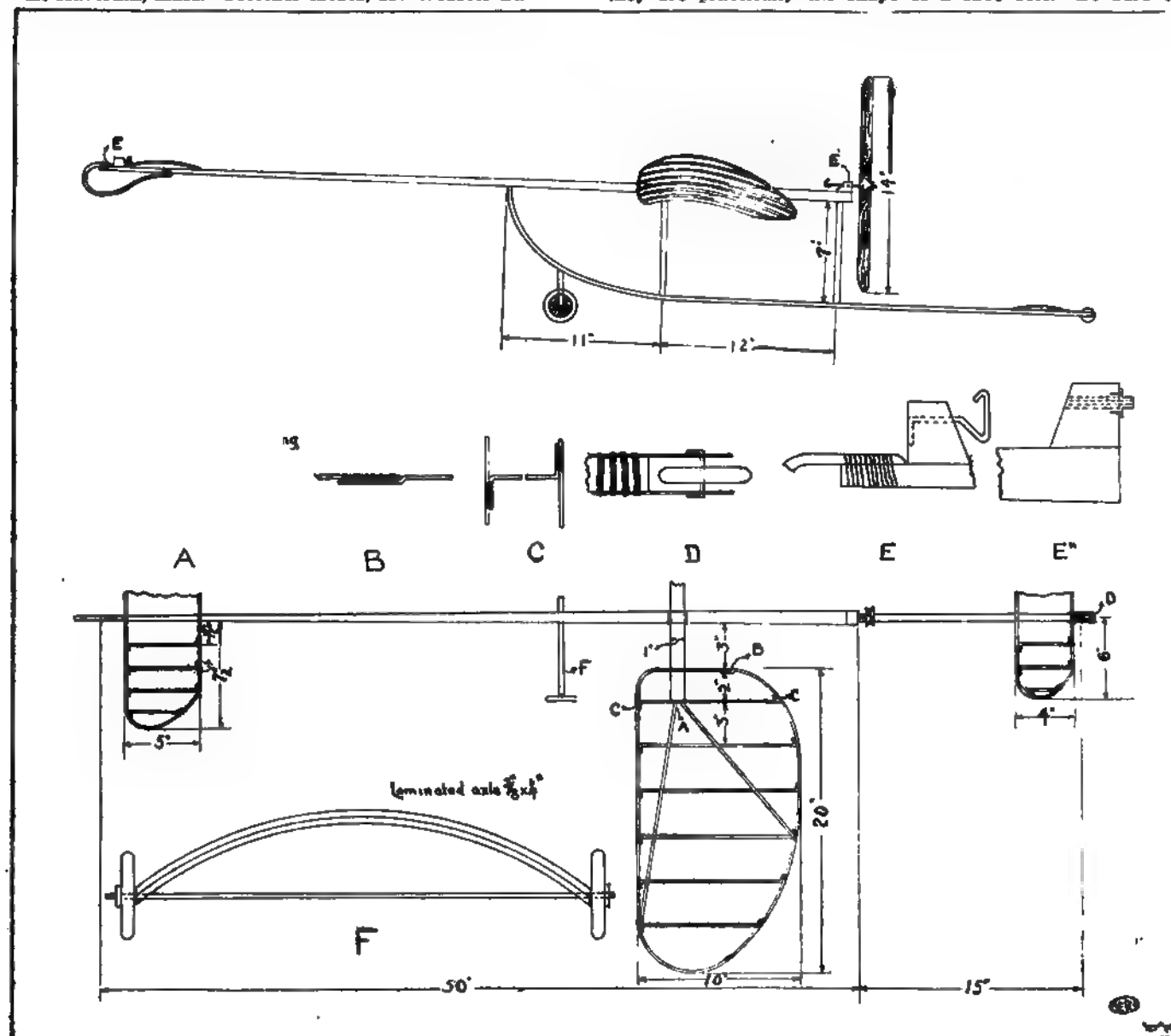
An Unusually Stable Model Described

By WALDO G. CLEGG

Of the large number of models with which the writer has experimented, the one in the following description has given the best general results, considering speed, stability, distance and duration as the most desirable features. It has attained a speed of approximately 20 miles per hour—fast for a model—and has flown 750 feet straightaway. In circular flights it has remained in the air 35 seconds. The most notable feature, however, is its unusual stability. The model has been flown in all kinds of weather, and has always shown its stability to ride bad winds, and land without mishap. The fore and aft rudders give it exceptional, longitudinal stability; while the peculiar disposition of the main wings tend to preserve lateral equilibrium.

The construction is not nearly so complicated as it may seem. Any one with a little experience may build one of these flyers, if careful attention is paid to the plans and the description.

All the planes are bent from soft steel wire, 25 gauge. This construction is much more lasting than wood, as it allows of reshaping the planes if bent in a bad landing; it also permits their construction in birdlike outline. In this case they are practically the shape of a shoe sole. Be sure to



make them exact duplicates; then bend the ends together, bind with fine wire and solder as shown at B. The ribs are preferably of 25 gauge wire, attached as shown at C, but wood may be used. An excellent wood rib, that will hold its shape better than the ordinary steamed kind is made by laminating two pieces of 1-16-inch white wood over a form. Lash these on with thread, afterward coating the joints with glue.

The two planes are connected by a distance piece $\frac{1}{8}$ -inch thick by 1 inch wide and 10 inches long. It is made by laminating two pieces of 1-16-inch white wood on a circularly curved form. Attach the planes to this, each at a distance of three inches from the center, binding at the first rib, as shown at A. An upright is also connected here, to which the bracing is attached. It is $\frac{1}{4}$ inch by 1-16 whitewood, 4 inches long. The uprights themselves are braced with wire, top and bottom. The braces for the planes, $\frac{1}{8}$ -inch square birch, are bound on these uprights and to the wire frame at their other extremity, as shown in the plan view. These wood braces act both as compression and tension members.

The construction of both the front and rear elevators is the same as that of the main plane. A rudder may be added at the rear, although it is not absolutely necessary. Cover all planes with varnished silk, which should be stitched on the frame. All the planes are bound to the motor base with rubber.

The main motor stick is spruce, $\frac{5}{8}$ -inch square at the propeller end and tapering to $\frac{1}{4}$ -inch square at the front. Glue blocks of wood at the front and rear ends to receive the stationary hook and the propeller bearing, respectively. This is clearly shown at EE.

The main skid is $\frac{1}{4} \times \frac{3}{4}$ birch, about 40 inches long before bending. The uprights are of the same size spruce, 7 inches long. The front axle, 1-16-inch steel rod, shown at F, is run through a laminated birch support, which acts as a shock absorber. This is also shown at F. The wheels are fitted with miniature pneumatic tires. The whole is attached to the main skid somewhat forward of the center of gravity. The rear wheel is attached to the skid by shafts lashed on with rubber, as at D. The skid at the extreme forward end is to take up the shock of a "header." It is made of birch or rattan.

The propeller is 14 inches in diameter, 24-inch pitch. This will make the angle at the tips about 30 degrees. Spruce or poplar may be used, but a laminated propeller is much more durable and beautiful. If possible, use a ball-bearing shaft; if not, use a bearing of brass tubing. To get the best results and the minimum vibration, be sure to drill the shaft hole perpendicular to the hub face.

This propeller will require about 80 feet of 3-32-inch square rubber. It should be run at 1,200 r. p. m. Vary the amount of rubber used until this speed is obtained. Take care to have as few knots as possible in the rubber between the attachment joints. The motor will allow of about 500 turns. In order to allow the strands to slip over one another and obtain the greatest possible number of turns, the rubber should be treated with a lubricant.

Warm water, in which has been dissolved a small quantity of soda, is good for this purpose, but has the disadvantage of drying up quickly. Do not make the mistake of using greases or oils. They are injurious to the rubber and tend to soften it and make it sticky. Glycerine, which is the best lubricant obtainable, is not a grease; it is obtained by a process known as saponification. The oil is removed, leaving the pure glycerine. The use of this as a lubricant will preserve the rubber, and the number of turns to be doubled.

Do not make first trials of this model in a high wind, as its high degree of stability is only obtained after careful adjustment. When thoroughly tuned up, you may enter it in any ordinary contest and feel sure of a successful outcome.

U. S. HAS NO AERO AUXILIARIES

New York, December 16.—During an informal discussion in the "Birdmen's Roost," at the Hotel Astor, the other night, someone pointed out that the most striking feature of the recent French maneuvers was not the success achieved by the military pilots, so much as the evidence revealed of the wonderfully complete and efficient organization existing in the matter of the automobile transport and repair trains. There will be 13 motortrucks, carrying all the necessary spare parts, repairing outfit, shelter tents and mechanics,

and in addition an electric autotruck containing a complete workshop and force. There is not the faintest vestige of the existence of any such equipment in the United States Army Aviation Corps, and without it the utility of a whole squadron of machines is almost nullified. Facts such as these prove more forcibly than words the neglect that has characterized the attitude of Washington towards aviation.



1,010,487, December 5, 1911.—Carl Julius Hovard Flindt, Copenhagen, Denmark. A propeller comprising two blades formed from a single sheet of material, each blade having a helical surface, the helical surfaces intersecting each other, and said blades being shaped to provide an eccentrically located opening for a boss and a propeller shaft, and the generatrix at the leading edges of said helical surfaces forming an acute angle with the axis of said boss and the said angle increasing uniformly toward the other ends of the blades.

1,010,585, December 5, 1911.—Lionel A. Carter, St. Louis, Mo., assignor to Oscar H. Hyde, trustee. A toy flying machine comprising an elongated body member having a propeller at both of its ends, said propellers being oppositely rotatable, but arranged and adapted to propel the machine in one direction, an aeroplane mounted transversely of said elongated body member and adjustable lengthwise thereof, and a balancing frame depending from said body member beneath said aeroplane and adjustable lengthwise of said body member.

1,010,644, December 5, 1911.—Christopher J. Lake, Bridgeport, Conn. A flying machine embodying a rearwardly ascending series of supporting surfaces in which the intermediate surfaces have greater transverse dimensions than the front and rear surfaces.

1,010,718, December 5, 1911.—Louis C. Badeau, New York, N. Y. An airship comprising outer and inner elongated tubes secured together at their ends, said tubes being eccentric, with the inner tube at the bottom of the outer, a gas container being afforded between said tubes, and the inner tube constituting an air tunnel open at its ends, propellers in said air tunnel and means for driving the same, and two vertically disposed rudders pivoted centrally on a vertical axis at the two open ends of said air tunnel, and means for controlling said rudders.

1,010,783, December 5, 1911.—William Mooney, Washington, D. C. A toy aeroplane, comprising a main longitudinally curved rib, a laterally elongated front plane pivotally connected midway of its ends to the front of said rib whereby it may be set with one end in advance of the other, a rear laterally elongated plane connected midway of its ends to the rear of said rib, the rear plane extending laterally a greater distance on both sides than the front plane, both of said planes being upwardly bowed, a sleeve slipped upon the rear end of the rib and provided with an upwardly extending flange, a shaft journaled in said flange and formed with a loop and with an eye, a hook secured to the rib, a propeller provided with a hub portion accommodating the loop of the shaft, and a torsional band extending longitudinally as shown, said band being held in said eye and in the hook, whereby to hold the sleeve on the rear end of the rib and to rotate the propeller when the band is placed under torsional strain.

1,010,946, December 5, 1911.—Harold Foster Parker, Dorchester Center, Mass. A balancing means for an aeroplane having pivoted balancing planes at each side thereof, a pair of blocks provided with a recessed portion having a plate slidable therein, each of the said plates containing an opening adapted to register with either one of a plurality of tubes, one of the said tubes being in communication with the atmosphere and the other communicating with the source of pressure, a pendulum, and means whereby as the pendulum is swung the said opening in each of the said movable plates may be brought into register with either of the said tubes.

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Notice to Advertisers

Beginning with Vol. III., No. 14, the issue of AERO dated January 6, 1912, rates for advertisements appearing in the AERO MART will be advanced in accordance with the following schedule.

Situations and Wants, 2 cents a word.

For Sale, Financial, Models and Model Supplies, Patents, etc., 5 cents a word.
Payable strictly in advance.

SITUATIONS VACANT.

MANAGER—Aviator wants manager to furnish Wright biplane for next season. Address Box 264, Clovis, New Mexico.

WANTED—Few young men to train for aviators. Construction and actual field practice. \$100 required. Aeroplane, 231 W. Sixty-second Place, Chicago.

SITUATIONS WANTED.

ASSISTANT—Young man desires position as helper with some aeroplane concern, or as aviator's assistant. Have considerable experience on various types of models. Best references as to habits, ability, etc. Address Earl Schoppe, 3042 E street, Philadelphia, Pa.

AVIATOR—Licensed pilot, graduate Wright school, desires position. References furnished. Address Aviator, 25 Sycamore St., Dayton, Ohio.

AVIATOR—Young man desires backing or employment. State full particulars with your proposition. Box 178, care Aero, St. Louis.

AVIATOR—W. L. Hunt is now open for position, building or flying. Curtiss preferred. Want party to furnish motor for Curtiss-type. 2926 Kenwood Ave., Indianapolis, Ind.

LICENSED AVIATOR—From Bleriot school in France, open for engagement, have studied the business in all its branches while abroad. Box 194, care Aero, St. Louis.

MECHANIC—Aero mechanic, six years' experience, best aero references; monoplane and biplane experience. Wish position as aviator mechanic or in shop. Box 172, care Aero, St. Louis.

MISCELLANEOUS WANTS.

ADDRESS—Wanted the proper address of Wenrel Haupt of New York City. The Co-Operative Aero Association, Muncie, Ind.

MOTOR—Wanted at once one or two second-hand Gnome motors, 50 or 70-horsepower. Address E. J. Romano, 1623 Summit Ave., Seattle, Wash

FOR SALE.

A JURY of 100 have decided that the Cellulose Turbine is O. K. The Cellulose Turbine is an internal combustion turbine, built expressly for the model builder. New York Distributors: Shortt-Caniff Co., Marlborough, N. Y.; Distributors for England: S. Summerfield & Co., Aeronautical Experts, Melton Mowbray, England. Correspondence invited. The Co-Operative Aero Association, Muncie, Ind.

AIRCRAFT SUPPLIES—Aeroplanes for sale and built to order; propellers, models and model stock; Chicago engines; flying models. Chicago Aero Works, H. S. Renton, Prop., 164 N. Wabash Ave., Chicago, Ill.

CURTISS-TYPE knockdown for sale; absolutely complete except power, \$200. Screwdriver and wrench only tools needed to assemble. Fabric, wheels, wire, turnbuckles, everything included. Guaranteed. Carr Aeroplane Company, Sioux Falls, So. Dakota.

CURTISS-TYPE—For sale a new 26-foot Curtiss-type biplane, covered with Goodyear No. 10 cloth, without motor. Exact duplicate of Lincoln Beachy's. Have plates, oil guards, Bleriot tank for Gnome motor, two new propellers, extra wheels, tires, spare parts enough to almost build another machine. This plane is a beauty. Combination tool chest and work bench, all kinds tools, turnbuckle, etc., in fact ready for dates. The first \$1,000 takes entire outfit. Box 193, care Aero.

GLIDERS—Others are flying them—why not you? Purchase our completely assembled 20-foot Aeroduster special biplane gliders at \$25 and show your friends what you can do. Glider Department, Aeroduster Construction Company, 3751 Indiana Ave., Chicago.

HARRIMAN—For sale, sacrifice 50-horsepower Harriman engine, \$500, cost \$1,500. Ten hours' total running. Earned \$5,000. Bosch magneto, propeller. Guaranteed perfect condition. Address Box 192, care Aero, St. Louis.

MAKE an aeroplane from your bicycle or on skis. Send 50 cents for blue-prints and instructions of either. Address Hull Monoplane Co., Marshalltown, Ia.

MOTOR—For sale 55-horsepower, four-cylinder opposed aero motor, propeller, tank, new 60 radiator. All complete power plant \$350. Herbert Grant, Roanoke, Va.

MOTOR—For sale the 50-horsepower DeChenne motor we used the past season giving exhibitions, making hundreds of successful flights, and which is as good, or better, than new, complete with propeller, etc., \$500. Also one new motor for immediate delivery. De Chenne Motor & Aeroplane Co., Monett, Mo.

MOTOR—100-horsepower Emerson motor for sale, price \$850. This motor is probably the most perfect machine ever turned out by this company, has been run about four hours. Can be inspected in New York City. Address C. O. Hadley, Tarrytown, N. Y.

MONOPLANE—New Bleriot monoplane, almost completed, \$600. First-class material and workmanship used throughout. Can be seen any time. Write or call, M. R. L., 26 North Franklin St., Hempstead, N. Y.

PROPELLERS, MOTORS—For sale, one Requa-Gibson propeller seven-foot diameter, six-foot pitch, \$35. One French propeller type 8.097-foot diameter, 3.987-foot pitch, \$50. One French propeller type 8.097-foot diameter, 3.45-foot pitch, \$50. One Dean Mfg. Co. propeller type 6½-foot diameter, 4¼-foot pitch, \$50. The above French propellers were made in France, are made of the very best of material and workmanship. The price f. o. b. Paris is \$100 each. One 50-horsepower Harriman engine, four-cylinder, four-cycle. This engine sells for \$1,650, our price \$700. This includes a complete power plant. One six-cylinder, two-cycle, 48-horsepower engine \$775. This includes radiator, propeller and high tension magneto. This engine sells for \$1,500. We are closing out our business and must sell. LeBron-Adams Aeroplane Co., Omaha, Neb.

Directory of Aviators

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RENE BARRIER(Gnome Driven
Queen Monoplane.)Address: Care Queen Aeroplane Co., 71 Broadway or Fort George
Park, New York City.**MORTIMER F. BATES**(Gnome Driven
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Care: The Moisant International Aviators, Winfield, L. I.

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TOM W. BENOIST

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PHOTOGRAPHS—Thirty perfect photographs of prominent aviators, machines, flights, etc., interesting, authentic, descriptions \$1. Sample, six photographs, 25 cents. Aero Specialty Co., Revere, Mass.

RIBS—For sale Curtiss-type and Farman ribs, rough. Finish them yourself and save money. Limited number. H. A. Munter, 944 26th Ave., Seattle, Wash.

WOODWORK—For sale for winter months only, complete woodwork for 30-foot Curtiss-type biplane, all shellacked, ready to assemble. Price \$60. Roanoke Bi Plane Co., Box 106, Roanoke, Va.

MODELS AND MODEL SUPPLIES.

COMPLETE PLAN drawn to scale with full instructions for building the only Wright three-foot biplane model that positively flies; 25 cents post-paid. Drawings and directions for three-foot model Bleriot monoplane, 15 cents. Stamp brings most complete, interesting and instructive catalogue published. Ideal Aeroplane and Supply Company, 84½ West Broadway, New York, N. Y.

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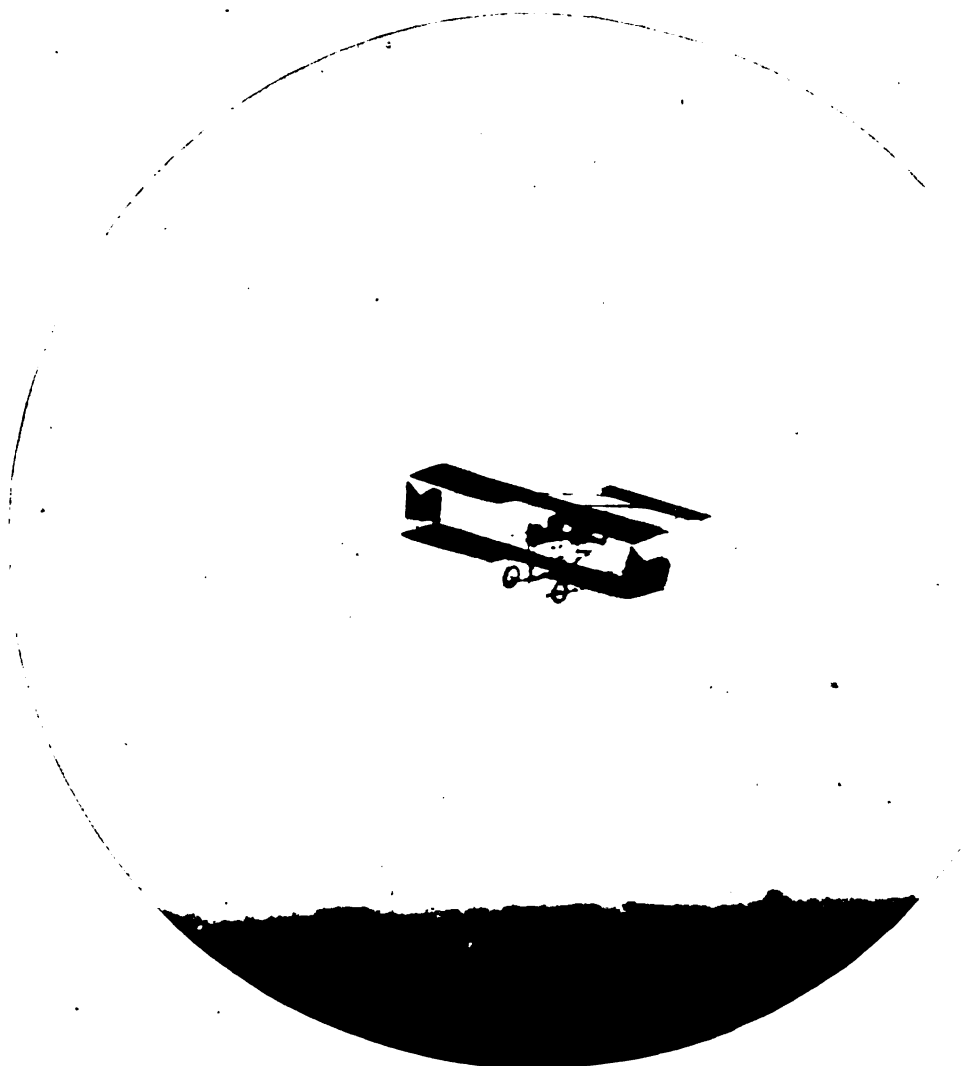
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Edited by E. PERCY NOEL

COMPETITION WILL BE ESSENTIAL 1912 FEATURE

By EARLE L. OVINGTON

EDITOR'S NOTE: — Mr. Ovington, one of the more successful American pilots, is a graduate of L. Bleriot's school at Pau, France. During the past year he flew a 70-horsepower Bleriot-Gnome monoplane, which type he was first to bring to the United States. In it he made the first aeroplane flight over Boston, flew with the best speed at the Chicago meet, carried the first United States mail and won the \$10,000-prize in the Boston Globe's Tri-State race during the Boston meet. As an experienced exhibition and cross-country flier who has made a sane success of his work, he is qualified to speak authoritatively.

We have asked Mr. Ovington to give to the readers of AERO his opinions on several matters of importance to all concerned with flight. This he will do in a series of articles of which this is the first.

Unquestionably the cream has been skimmed from the business of exhibition flying. I do not mean to say that money will not be made next season flying before audiences, but I do believe that the remuneration for such flying will be nothing like what it has been during the past season, just as the amounts received during the past season were not to be compared, as a rule, with the prices paid the previous season. The time has gone by when the public will flock to the local driving park just to see aviators rise from the ground and return. So long as flying was a novelty it was sufficient for a man to simply fly, but now that the majority of the inhabitants in fairly thickly settled portions have seen an aeroplane, something more than mere flying will be required.

Henceforth it will be necessary to introduce the element of intense competition in order to persuade the average man to part with his hard-earned 50-cent piece. You would certainly pay nothing to see horses running at random in a field, nor to see boats sailing under ordinary conditions, nor to see automobiles, however fast they might be, unless they were pitted one against the other. And the time has arrived in the development of the aeroplane when the same rule applies to it. In other words, the promoters of successful aviation meets next season will be those who introduce into their programs the element of intense competition. You notice simply "competition" is not sufficient; "intense competition" will be required. A bomb-dropping contest is competition, and has its place and usefulness to pad out a program, but competitive races will be the drawing cards, and lucky will be the promoter who can so classify his competitors so that close and exciting finishes are the rule rather than the exception.

Looked at from every standpoint, the Chicago meet was by far the most successful of all the aviation meetings held during the past season in this country, if not the world. Much credit is due to the excellent management, but I believe what brought the people in at the gate was the fact that not a day passed but what there were more or less closely contested races, not merely speed tests against time. And the Chicago meet was the only open meet where the races really

were closely contested. The receipts at the gate rose steadily during the entire time of the meet, reaching the highest point on the last day, which state of affairs would seem to indicate that people went home and spread the news of the wonderful sights to be seen. Aeroplaning was not at all new in Chicago, hence it was not the novelty of seeing a man in the air which attracted the multitude. Had this been the case their curiosity could have been satisfied for nothing, for the meet was held just off one of the largest boulevards in the city, and the flying could be plainly seen without the necessity of entering the enclosure, not to mention that there were a number of free seats open to all.

Such racing as was seen at Chicago, however, had never been seen before in this country, if indeed in the world. In several of the races there were three contestants, separated from each other by not over 50 feet, and often not more than ten feet of space lay between two of the machines. In a 20-mile race, for instance, it was often only a matter of a second to determine the winner. It is little wonder that the combination of the latest and most sensational means of locomotion, with the element of intense competition, created such enthusiasm, and steadily raised the gate receipts. Let the promoters of aviation meetings for 1912 profit by the above, and have as the backbone of their programs sharply contested races.

There was another point in connection with the races at the Chicago meet which no doubt had much to do with the enthusiasm produced. I vividly recall how we aviators all kicked at the "dangerous course" provided for us. Instead of being circular or elliptical, it was practically a long drawn out pentagon, with the longest side passing the grandstand, which was located towards one end of the field. The turns around the pylons were very sharp, with the audience solid just beyond. We pictured ourselves slipping and sliding around these turns, for we knew by the men and machines present that competition would be intense, and visions of losing control of the machines and plowing into the densely packed multitude were indulged in and painted in all their horror to the contest committee in charge. We petitioned that the course be made more nearly circular by extending it out over Lake Michigan. But our pleadings were in vain, for the powers that reigned wanted excitement. And they certainly got it.

I shall never forget the races around that course. Never having turned such short corners at full speed before, I naturally was cautious, and in consequence at first slid far on the turns, in several cases out over the audience. But under the stress of competition, I took the corners more and more sharply, until I found myself in danger of touching the pylons, for we all flew pretty low in the races. I remember in one race, where I only held the lead by a dozen feet, I resolved to fit gun sights to the hood of my monoplane in order that I might steer in the straightest possible line in going from one pylon to the other. That may sound "fishy,"

Aviation Progress from the Year of First Public Flight.

1908	1909	1910	1911	1908	1909	1910	1911	1908	1909	1910	1911	1908	1909	1910	1911
40.3 m. p. h.	47 m. p. h.	65 m. p. h.	81 m. p. h.	0:20:23	4:17:35	8:12:00	11:00:00	77.7 m.	144.1 m.	320 m.	446 m.	62.1 ft.	294.7 ft.	10,499 ft.	13,776 ft.

does not mean a serious inconvenience to the following but it is the truth. Although I had never flown a race before, I soon found myself, whether I was in my Bleriot monoplane or Curtiss biplane, taking those corners at an angle of 60 degrees. For if I did not, the next fellow did, and I lost the race.

What I am trying to emphasize in relating the above experiences at Chicago is that a long, thin course makes for more exciting racing than a short, thick one. The ideal course for exciting races would be, of course, a straight-away running parallel to and just in front of the grandstand, with sharp turns at either end. In practice I believe the average mile trotting track would make a good course, and at the same time one which is not too dangerous. We had such a track at Columbus, and I found no difficulty in negotiating it at speeds well above a mile a minute.

While I am on this subject of track aeroplane racing, let me say something about the danger of one aviator getting the propeller draught from another. Before experiencing this I, of course, thought that such a thing might prove fatal to the following aviator, or at least it would seriously inconvenience him. Such is not necessarily the case, however, for at the Chicago meet I remember distinctly getting the full draught from Ely's 100-horsepower Curtiss racer, and that from the Wright machines several times, and in no case experienced much difficulty. At the moment I crossed the trail of the leading machine I was at a distance of perhaps 100 or 150 feet. The above statement, too, may also sound "fishy," but it is a matter of fact that the back draught from an aeroplane

aviator if he is not nearer than 100 feet or so, and provided he gets the draft fairly head-on. I have never caught the back draught of a machine squarely on the side, but have often received it from the front or slightly to one side or the other, and although I always prepare to meet it and look for it, I have never been placed in a dangerous position on account of it. Which is another instance going to prove that progress in aviation has not been primarily due to improvement in machines, but to the fact that aviators are learning more and more of the possibilities of the aeroplane, and the way to handle it under varying and often trying conditions.

Before the Chicago meet it was generally considered that aeroplane races on comparatively small courses and with several contestants simultaneously in the air were so dangerous as to be prohibitive, but the fact that for nine days at the Chicago meet such races were held, and not an accident on that account was the result, proves that the dangers of this class of racing are not as great as was supposed. In calling attention to these facts it is not my idea to make aeroplane racing more dangerous by emphasizing to promoters the advantages from an exhibition standpoint of small tracks and several contestants in the air at once, but to show that competitive racing is not as dangerous as supposed if properly governed. It is needless to say that the onlookers should not be located at the corners and in proximity to them, as they were at Chicago.

Continued on Page 262.

ADVANCE OF AMERICAN AVIATION IN 1911 REVIEWED

The past year has whirled by so rapidly that at first glance a recounting of its events seems a simple task, but in reality its events have been so numerous—its improvements so great—that one is almost overwhelmed with astonishment when he attempts to consider them. A year ago cross-country flying amounted to nothing, speed records stood far below those now in existence, and the whole thought of the American aviation world was directed on exhibition flying. A year ago the hydroaeroplane was unheard of, and governmental appropriation for military aeronautics was purely experimental.

When 1911 opened, the world was just recovering from the shock of losing two of its best pilots, John B. Moisant and Arch Hoxsey, on that dark December 31, which brought 1910 to a close. Had anyone then spoken of the possibility of crossing the country in less than 50 days, he would have been laughed at, and the man who suggested that it would be possible to poise for ten minutes in the air in a motorless machine would have been hooted. Passenger carrying was then remarked upon as difficult, and wholesale progress in this work was entirely unexpected.

Schools were few, and poorly conducted, and for a time it was almost impossible to secure training. Pilots' licenses were a rarity in America, and any man who could make a quarter of a mile hop was allowed to call himself an aviator. records were then unknown, and Aéro was considered pre-Men whose names have since become identified with world's mature.

But each month brought its changes and its developments. Slowly the dreams of quick fame and easy money faded from the eyes of the fliers, and the watchwords became progress and honor. That this work, directed toward a good end, brings its results, is made evident by the fact that the memory of such flights as those made by Calbraith P. Rodgers and Harry N. Atwood will live when the prize winners and money grabbers of the great guarantee meets, popular a year ago, will be forgotten. Who thinks of Atwood now but for the fact that he flew from St. Louis to New York? The numerous meets and exhibitions in which he took part are, as a rule, already forgotten.

JANUARY.

January a year ago was a busy month. The Grand Central Palace Aero and Automobile Show opened on New Year's eve, with the Los Angeles meet a week old, and plans laid for

the San Francisco meet, which opened on January 7. There were in all about 13 full sized planes on exhibition at the Palace Show, and it brought a great number of the eastern enthusiasts together for the first time, and set them to talking and arguing aviation questions. The Wright company actually sold three machines during the show, and, as all of their exhibition machines were busy on the Pacific coast, the plane exhibited was one already belonging to Russell A. Alger, of Detroit.

LINCOLN BEACHEY FLYING OVER NIAGARA FALLS

The Los Angeles meet had been running since December 24, and with 20 aviators entered, including Hubert Latham and James Radley, was making a mark as a representative flying exhibition. The interesting part of its history belongs properly to 1910, for it was on December 26 that Hoxsey made his great altitude flight, and five days later that this

wonderful flier was killed. In all, \$10,525 in prizes was distributed to the fliers at Dominguez, and then the flying took a quick change of scene to San Francisco.

There the meet opened with long flights over the city and the harbor by Latham and Radley. The flying lasted practically until the end of the month, the meet proving a great factor in the development of military aeronautics. This meet, which helped Congress to make the appropriation for military aeroplanes, which might have been delayed for another year, had not the value of the flying machine been so impressed upon the Pacific coast soldiery that it sent hurriedly enthusiastic endorsements to the officials of the War Department.

On Tuesday, January 17, Eugene B. Ely startled the world by making a flight from the shore to the deck of the U. S. cruiser *Pennsylvania* and return. A few days later, on January 22, P. O. Parmelee broke the American duration record by flying for 3 hours and 39 minutes above Selfridge field. After Ely's flight the meet was conducted almost entirely for the benefit of the military, and scouting parties were the order of the day. Among the military scouts who distinguished themselves was Lieut. G. E. M. Kelly, who made many photographs from Brookins' machine.

On January 10, Didier Masson, a French novice in California, flew 75 miles, carrying a small packet of non-governmental mail. Just as the San Francisco meet closed, and it appeared that there would be little happening for some few weeks, J. A. D. McCurdy brought attention to himself by breaking the over-sea record in an attempt to cover the 95 miles between Key West, Fla., and Cuba. Although his oil supply ran short while he was within sight of the Cuban coast, the trip made another mark in the year's progress.

Also on January 26, after a long series of experiments that were not talked of, came Glenn H. Curtiss' first public flight in his hydroaeroplane. For several months more this machine was developed on the coast until it became the eminently practical machine which is being sold in foreign countries today.

FEBRUARY.

At about the same time the first inkling of the remarkable flight developments that were to come later along the Mexican border was made when Harry Harkness, on February 7, flew from Fort Rosecrans, near Los Angeles, Cal., to Fort Tia Juana, which is situated on the boundary line between California and Mexico.

On February 11, the Moisant aviators began an exhibition in El Paso, Tex. While none of the flying was official, yet it paved the way to later events, for during an interesting week on the border, Rene Simon and C. K. Hamilton made flights across the Rio Grande and over the camps of rebel and federal forces.

From February 20 to 25 the most important indoor exhibition of the year took place in Boston, when the aero show opened in the Mechanics building. There were 25 or more full-sized, practical machines on exhibition, and everyone who visited the hall remarked upon the evident progress made since the show in New York. The exhibits in the hall were complete to the smallest detail, and practically every firm using space has since felt the good influence of the advertising gained in Boston.

On February 23, Lieut. Benjamin Foulols and P. O. Parmelee were ordered to Laredo, Tex., for scouting duty, Parmelee being released temporarily by the Wrights for this purpose. They spent a week or two in scouting work, and then suddenly, on March 4, Parmelee, with Foulols beside him, made a flight which can still be called remarkable, traveling 116 miles from Laredo, to Eagle Pass, Tex., over a rough desert with no landing facilities.

MARCH.

On March 5 the Washington Aero Show opened with about 15 man-carrying planes on exhibition. While this show did not equal the Boston exhibition in point of size or magnificence, it was nevertheless important in its effect on Washington society. A prominent feature of this exhibition was the old June Bug, Glenn Curtiss' first machine. On March 11 it was announced that the show, which originally intended to run one week, would be continued for another week because of delays in getting it started on time.

From then on, for some two months, aviation affairs assumed a quiet, progressive tone. All over the country, on

the west coast, at Mineola, in Texas, in Havana, and in Washington, D. C., the work of training and experimenting was going on. Soon after the San Francisco meet several fliers returned to the New York fields to build and make practice flights whenever the weather was suitable. At San Diego, the Curtiss hydroaeroplane was being developed rapidly, and a number of army officers were being trained on the Curtiss flier. At Washington, steps were being taken to form a national school for military fliers, at College Park, Md. There was still a great deal of excitement over the Mexican situation, and four aeroplanes were kept there constantly for scouting work. Throughout all of this time there was considerable exhibition flying in the south and in California.

In Havana, Cuba, toward the last of March, the Curtiss aviators, headed by J. A. D. McCurdy, made several fine flights. Notable among them was a cross-country over-water trip by McCurdy around Morro castle for a \$3,000 prize. On the heels of the Curtiss fliers came the Moisant team, with Barrier, who bettered McCurdy's time about the castle, and was finally awarded the prize after a long controversy as to the time when the contest closed.

APRIL.

On April 6, came the first big meeting of members of the Aero Club of Illinois, at which was planned the great international meet which has since become the most prominent of American meetings. At this banquet the plans and prospects of the affair were discussed, and several committees were appointed to examine the possibilities of obtaining financial backing. The Aero Club of America was at this time making plans for a National Elimination race for the Gordon-Bennett aviation cup, which later was abandoned.

The exhibition season opened early in April, although it was April 15 before the first really big meeting took place at Salt Lake City, Utah. This affair was the first to bring the Curtiss and Wright aviators together for a joint exhibition, and it was a great success. This was also one of the first public exhibitions of the Curtiss hydroaeroplane. Only the well-known Wright aviators, Walter Brookins and P. O. Parmelee, took part in the flying in Utah, and very little came out about the vast amount of training work then going on at the Wright camp in Dayton, O. As a matter of fact, this was a busy month there, and a number of new fliers were developed.

By the end of April, California was practically deserted, except for novices and non-qualified amateurs. The exodus of aviators from this section began early in the month, and it was over when Glenn H. Curtiss left to take part in the Salt Lake meet.

MAY.

The month of May began auspiciously, and yet somewhat sadly, for while the return of Capt. Thomas Baldwin, with Tod Shriver and J. C. Mars, and the arrival of Earle Ovington in New York made the Long Island flying fields much more lively than ever before, aviation suffered a loss in the death of Lieut. G. E. M. Kelly, on May 10, at San Antonio, Tex. Preparations for the summer went on rapidly at Dayton and other camps, and many new schools were founded, all of which have by now become established factors in the development of the country's flying.

On May 29, in America, the first intercollegiate meet took place on the Harvard Stadium, with Cornell, Tufts, and the Massachusetts Institute of Technology sharing first honors among the students. From the preparations now going on at eastern schools, this event is destined to become a spring fixture.

JUNE.

On June 8 the first important piece of aero legislation passed the Connecticut legislature in the Forbes aero bill. Throughout the month exhibition fliers were busy in every state. During the Waltham meet, a successful exhibition near Boston, (on June 21), Harry N. Atwood began the first of the series of long cross-country flights that in one summer placed him among the most prominent American fliers. Leaving Waltham, he flew 135 miles in 185 minutes, from Waltham to Pittsfield, N. H., carrying a passenger every foot of the way.

To be Continued next week.

400 AEROPLANES BUILT TO ADVANCE PROGRESS

Although reports have not been received from every manufacturer and individual builder, Aero has made a sufficiently thorough canvass of the activity of the year to gain a fairly accurate idea of the number of aeroplanes built in the United States during 1911. The total is nearly 400. Of these about 300 have flown. Some have never been fitted with motors; others, for various reasons, have never been tried.

The most significant phase of this building during 1911 is that very few of the individual builders, who are commonly called "amateur builders," have built machines for exhibition purposes. The chief object of the constructor of an aeroplane that has differed slightly or materially from an already accepted type, has been experimentation. When a copy of a standard type of aeroplane has been made it has, more often than otherwise, been built for sport. Besides, fully 300 of the number of machines built have been successfully flown.

This is a very encouraging condition, for in 1910 the aeroplanes built were largely failures. There were more failures built by amateurs that year than successful planes by experts. The craze of building one's own aeroplane, so that thousands of dollars could be won within very short order, has passed as well. The builders of 1911, if they have not been

actually engaged in the manufacture of aeroplanes to sell, have had the motive which helped rather than hindered aviation progress. They wished to build a better aeroplane. That this same endeavor will continue in 1912 there is no doubt, and that it will be more effective and more intelligent is evident from the reports received.

Here the chief manufacturers have been the Queen Monoplane Company, which has produced about one dozen monoplanes and three biplanes; the Moisant Company, which, during the year, has made 15 machines, one of them a biplane; the American Aeroplane Supply House, which has made ten monoplanes of the Bleriot-type. The Curtiss Company, at Hammondsport, has, during the year, turned out about 25 biplanes, including hydros. Fred P. Schneider has produced several, as have C. and A. Witteman and others. These, with 30 or more planes built around New York and throughout the state, bring the total production of New York State for 1911 to about 100.

J. A. Olson, a New York builder, began experimental work in 1908 with a propelled ice boat. During the year of 1910 he built a monoplane of his own design, which he sold to L. Burger of Lon Island, and he made up the parts for three

TYPICAL AEROPLANES AND THEIR BUILDERS—1, C. Allan Brinkman, Lancaster, Pa.; 2, J. W. De Pries, Ilwaco, Wash.; 3, Lewis Parker, Fulton, N. Y.; 4, George F. Smith, New Britain, Conn.; 5, W. E. Howe, Hartford, Conn.; 6, Henry D. Copeland, 7, Lester V. Bratton, International Aeroplane Company; 8, Jack Simpson, Chicago, Ill.

Curtiss-type biplanes for Dr. N. R. Ford, of the Bronx, a Curtiss-type for the Mohawk Aviation Company, and a Curtiss-type, fitted with a Rossenberger motor, for H. Reagan, of New York. In 1911 he built a Farman-type for himself, but lacked the capital to furnish an engine for it. He used broken parts of C. B. Harmon's Farman for patterns while building this machine.

Edward H. Jones, of 1019 Boston Road, New York, N. Y., built a biplane during the summer, and he is now at work upon a plane of his own design, with which he intends to go into exhibition work. Sam Barton, of 238 Dumont avenue, Brooklyn, N. Y., built a biplane which was used for sport. It was equipped with an Elbridge motor. Sims Parker, of Fulton, N. Y., built two biplanes, both of which were used for experimental and sporting purposes. The machines were equipped with a motor of his own design. Warren Ritter, of 327 President street, Brooklyn, N. Y., built a biplane which flew successfully at Fort Madison, Ia., where it was sold after the flight. The Moisant Company, of New York, built 15 monoplanes chiefly for its own use, although it sold one for exhibition and one for sport.

In California a great number of machines were built, but as this state experiences such a continual coming and going of aviators it is hard to locate the builders who flourished there during the early part of the year. The Gage Aviation School of 320 East Twenty-fourth street, Los Angeles, Cal., built and sold three machines during the year, all biplanes, two of which were sold to exhibition fliers, the other being kept for school use. The Eaton Brothers, also of Los Angeles, also built and sold several planes during the year.

Carl Browne, of Sacramento, built an original machine which was never tested.

Indiana found much of its work centered in Indianapolis, although several isolated builders have been reported throughout the state. The Shaw Exhibition Company, of Indianapolis, turned out three biplanes, one of which was sold for sporting purposes, while the other two were kept in use at exhibitions. Frank H. Garland, of 311 North Illinois street, Indianapolis, built one monoplane of his own design which flew successfully, equipped with his own design motor. It was used for experimental purposes only.

Pennsylvania is the center of considerable aeronautic interest and naturally a number of planes were built in that state. E. Allen Brinkman, of 141 South Queen street, Lancaster, Pa., built a large biplane of his own design which flew successfully when towed by an automobile. Brinkman is now working upon a Bleriot-type monoplane which he expects to have finished by February. R. M. Lloyd, of Harrisburg, built an aeroplane which flew successfully at the Harrisburg meet in September. James Toler and Louis Rigby, of New Castle, built a biplane which flew successfully. The Burns Brothers of Williamsport, Pa., built a monoplane resembling the Antoinette, which, so far as is known, has not been tested. John Stadtmuller, of Pawling, Pa., built a biplane which was not very successful, and then went to New Bedford, Mass., where a company was formed so that he could follow out his own ideas in building machines. He was at one time a partner in the building of a monoplane, but the machine was never finished owing to a quarrel among the builders.

E. R. Cary, of Norton, Kans., an amateur, built a monoplane and a biplane, the last of which flew successfully and was smashed. The monoplane was never tried. R. S. McAloney, of Clay Center, Kans., built a biplane. This is as far as the information goes concerning Kansas, but the Aerial Navigation Company of America, in Girard, has already turned out one machine which seems successful and it probably will produce several more within a short time.

The Mathewson Company, of Denver, Colo., built and flew three biplanes, all of which were used for exhibitions. The success of its fliers at various points is too well known to need repeating here. E. J. Williams, of 2225 Court Place, Denver, is now building a biplane which will be tried out soon. In addition to these, a few machines were built in Pueblo, and others of the smaller towns of Colorado, but none of them were very successful.

Missouri has a number of builders, many of whom are exceedingly hard to reach. The Benoist Aircraft Company, in St. Louis, is probably the largest manufacturer in the west. It has produced 16 machines in all during the last summer. All of these machines are now flying, some at the company

school, and others in the hands of purchasers about the country. In addition to this it has produced one special biplane, and one special monoplane to designs furnished by inventors. Ben Hankinson, of Nevada, Mo., has built a monoplane during the summer which has made some successful flights. Edmund Raich, of St. Louis, has built a monoplane and biplane, the last of which flew successfully. He is now at work upon another machine which will be complete within a few months. All of his machines were used for experiments. C. Moran, a tinner, also living in St. Louis, built a monoplane.

In Massachusetts the year's work was most prolific. Ernest B. Mason, of New Bedford, is at present building a monoplane combining the Bleriot fuselage and the Antoinette wings. Cecil Harris, of Dorchester, built a Bleriot monoplane during the summer, which has been tried successfully on short flights, on one of which it attained an altitude of 100 feet for a distance of more than 1,000 feet. J. D. T. Martin, of Abington, Mass., built a Farman-type biplane during the summer which did not fly successfully owing to the low power of its Ford motor. The Hobach Aeroplane Company, of Waltham, Mass., has just turned out its first machine, a biplane of the Breguet type fitted with an Anzani motor, which will be used entirely for school work.

The State of Michigan is usually found to be well represented in aeronautic events, and its interest in building is great. Harry J. Moss, of Detroit, Mich., built one biplane and two monoplanes during the summer for experimental work. The machines were equipped with automobile motors and the biplane, a Farman-type, proved successful on short flights until a miscalculation, resulting in a fall of 35 feet, wrecked it. Harry D. Copland, also of Detroit, made several successful flights in a Curtiss-type built by himself and equipped with a 30-horsepower Maximotor. Copland, who is 15 years old, is beginning to build another machine for next summer.

J. Huline Woodward, of New Egypt, N. J., has been an enthusiastic worker in aviation and Vincent Amos, of Paterson, N. J., built two biplanes during the summer and was successful with one of them. It was intended to use the machines for exhibitions booked by the International Aeroplane Manufacturing Company of which Amos is a member. Of the many other machines built in this state no record can be found, with the exception of that of a few original machines, which, so far as has been heard, have not been successful.

Ohio, like New York, has a handicap from the fact that one of the country's greatest aeroplane factories is located within the state. Aside from the Wright Company's productions, however, there were hundreds of enthusiasts at work throughout the year. Among them E. Y. Stewart, of Cleveland, built a successful biplane which was lately sold to a group of Chinese who represented themselves to be purchasing agents for the Chinese rebel government. Roy Wilcox, of Albion, O., built and flew five biplanes during the summer, and these were sold to the Chinese. The Longo Balloon and Biplane Company, of Columbus, O., built three Curtiss-type biplanes, and all of them flew successfully at exhibitions. Louis Miller, of Cincinnati, built a combination Curtiss and Farman-type machine, which flew successfully, although it was handicapped by an automobile motor. The T. and W. Aeroplane Company, of Akron, O., built two monoplanes for experimental work, and found them both successful.

Herbert L. Prout, of Cleveland, built a monoplane during the winter of 1910-1911, which proved partly successful on towed flights. He is now building a small monoplane, which he expects to try out in a short time. Harry R. Burns, also of Cleveland, with his brother Fred, built a biplane glider about a year ago when the brothers were living in Williamsport, Pa. Since then they have built a monoplane, following the Bleriot construction, which, when found a success, was traded for a Curtiss engine. They intend to build another monoplane during the winter.

In Illinois, Charles Berger, of Chicago, built two monoplanes for experimental work. W. O. Runcie, of the Windy City, built a Bleriot-type which flew successfully. He used it for sport only. C. R. Hannum, also of Chicago, built three biplanes during the summer, all of them being used successfully at exhibitions. The Western Aeroplane Manufacturing Company has built and sold two Curtiss-type machines since it opened September 25, and it has another in the process of construction. Jack Simpson, a Chicagoan, built a monoplane

during the summer which was successful in exhibitions, and when used for sporting purposes. Lester V. Bratton has been building machines for various manufacturing companies in Chicago with considerable success. In all, he put up 11 machines during the year, including three for the Chicago Aeroplane Manufacturing Company, four for the International Aeroplane Company and seven which he rebuilt for this last company, after they had been wrecked while on the road in exhibition work.

Ivar A. Knowles, of Effingham, Ill., has been interested in aviation for the past year, and he is now building a Curtiss-type machine. Louis E. Senninger, of Minier, Ill., has built a monoplane during the summer, but he has not tried it out as yet, because of his inability to get an engine. The Crescent Aeroplane Company, of Moline, Ill., built one biplane during the summer which flew successfully while being towed.

H. E. Howe, of Hartford, Conn., built a monoplane resembling a Bleriot, although it incorporated several original ideas. George F. Smith of New Britain, Conn., built a monoplane during the summer which has not been tried out as yet. Jesse S. Vogt, of Long Green, Md., has built a headless biplane which will be equipped with an automatic stability device which he has invented. The machine has not yet been tried, but as Vogt is now receiving backing from two wealthy gentlemen, he will have it ready for work soon. Walter Bengtson, of Canby, Minn., built a Curtiss-type biplane for practice in the art of flying, which was successful. He is now building another machine, his first having been smashed after a particularly successful day, on which he made three flights.

William J. Rice, of East Greenwich, R. I., built a biplane for experimental purposes. Y. F. Smith and Guy Hahn, of South Houston, Tex., built a headless biplane during the summer, which was successful on flights with the aviator alone and with passengers. George F. Hess, of Corvallis, Ore., built a Curtiss-type with A. M. Jeppeson, which proved successful, although it could never fly well on account of a heavy automobile motor which was used. With special gasoline this engine would develop sufficient power to lift the machine. The builders are now at work upon a 40-horsepower motor, with which they will continue work in the spring.

J. F. de Pries, of Jiwaco, Wash., built two machines during the year, both Curtiss-types. The flyers were used partly for exhibition work and partly for sport and were successful. De Pries was for a time connected with the Pacific Aviation Company, of Portland, Ore., which he assisted in the building and flying of a number of its machines. John C. Schwister, of Wausau, Wis., has been mentioned several times in AERO. His most successful machine was a Curtiss-type equipped with a Kirkham motor.

F. E. Pierce, a wireless operator in the service of the United States Government, now stationed on the U. S. S. Nashville, built a Demoiselle monoplane while at the wireless station at Puerto Bello, Panama, this year. He was compelled to use such materials as were obtainable at Colon and other nearby Central American cities. He is compelled to abandon his work now, for he will be at sea for a time, but when he is released from the service next year, he intends to return to aviation immediately. Herman E. Clarke, of Kitsilano, Vancouver, B. C., built a Curtiss-type a year ago, but could not get a motor, so he destroyed the machine. He now has a monoplane about complete, and he is considering the choice of a motor. Clarke is 18 years old, and has decided to enter aviation for the sport of it more than anything else.

In getting material for this review, AERO often found it difficult to learn the make of motor used. From the names we have at hand, the following figures may obtain as to the number of the various makes mentioned in the reports: Roberts, 53; Elbridge, 8; Hall-Scott, 5; Maxmotor, 5; Detroit Aeromotor, 3; Curtiss, 3; the Kirkham, Harriman, Smalley, Anzani, Gray Eagle and Indian Rotary, each one. These were all the names mentioned. In addition, six persons stated that they were designing their own engines, six more that they were using automobile engines, and one that he was using a motorcycle engine.

Gliders Are Much in Use For Practice and Study

The student aero clubs commenced work with renewed vigor at the opening of the fall terms, preparatory to keen

competition in the inter-collegiate glider meet next spring. The work is practical and scientific, so that the results obtained are worth while for all concerned.

Among the colleges that have been most prominent, and will figure chiefly in the inter-collegiate meet in 1912, are Cornell, Harvard, Dartmouth, University of Pennsylvania, Massachusetts Institute of Technology, University of Illinois. A number of schools through the country have active aero clubs for a similar purpose. Among these the clubs of Swarthmore and Volkmann schools have appeared most active.

Probably 100 gliders have been built and used during the year 1911. Among the individuals who have constructed them are H. Wilkins Maynard, Fair Haven, Vt., who is building a Morgan glider at present; Charles Schmitt, of Rutland, Vt., has built a glider which he used successfully in towed flight.

R. Stewart, of Baltimore, Md., who built a glider during the year with which he made several flights, is now working on a Curtiss-type which he will equip with a 35-40-horsepower motor.

Jack Seery, of Newark, N. J., has had good success with a glider of his own construction. S. W. McCausland, of Tewksbury, Mass., built a Wright-type glider in order to learn how to balance a machine before trying a power machine. While making a flight a gust of wind overturned the glider.

In Harrisburg, Pa., B. I. Haynes built a biplane glider which he entered in the Harrisburg Patriot Meet, where he made several glides.

Richard G. Lydy, a student at Western Military Academy, Alton, Ill., attained an altitude of 25 feet, and glided more than 1,200 feet in the biplane glider he constructed. The glides were made at Springfield, Ill. Lydy expects to build a monoplane glider this summer.

Using an automobile for towed flight, Thomas W. Strange, of Wilmington, N. C., has been successful with his biplane glider.

The brothers Albertson, of Baldwyn, Miss., built a biplane glider which was used successfully in towed flights. They are now designing a larger glider of the same type, with which gliding experiments will be made before an attempt is made to perfect a powered aeroplane. The novel features of the new glider will be in the landing skids and lower planes.

CLAYTON AND CRAIG GETS SAUGUS

Saugus, Mass., December 20.—The Saugus race track has been leased for one year, with option of purchase outright within that time, to the Clayton & Craig aviation school. A Burgess biplane will shortly be taken to the field by Harry N. Atwood, the chief instructor, in whose honor the aerodrome has been named "Atwood Park."

Shop lessons and lectures are being given in the school's headquarters at 15 Harcourt street, Boston, where it is expected that flying lessons for advanced pupils will be started in the near future. A substation for hydroaeroplanes has been located at Point of Pines in order that the aviators may avail themselves of the more constant depth of water at that point. The Burgess hydroaeroplane recently purchased by the school will be located at this point.

FANCIULLI WILL GO TO RUSSIA

New York, December 23.—Early in the new year Jerome S. Fanciulli, vice-president of the Curtiss Aeroplane Company, will leave for Russia to take charge of the demonstration of the Curtiss hydroaeroplane which Hugh Robinson is to make before the Grand Duke Michaelovitch for the Russian Aerial League. Several Curtiss "Triads" were shipped to Europe this week. The machine for Russia measures 33 feet in width and more than six feet in depth. It has a 75-horsepower engine. There are two other complete machines and parts for two more. A duplicate of the "hydro" destined for Russia will be delivered to Louis Paulhan, agent in Paris for Glenn H. Curtiss. The other complete machine will be used by Robinson for demonstration purposes in Germany, France and England. All the machines are of the dual-control, passenger-carrying type used by naval aviators.

E. PERCY NOEL, Founder-Editor

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The Editor is pleased to consider MS and photographs for publication, but only material that is likely to prove of interest to the readers of Aero. The Editor cannot undertake to answer technical inquiries except in the columns of Aero.

THE COMING YEAR

The past year in the world of aviation has been a progressive one. This is not matter of opinion, but a matter of fact shown by the changes in the figures of records for speed, duration, and distance without landings, while to some the change of more than 3,000 feet in the height record is also a sign of progress. These record changes have all been made in France, but the United States has led with the hydroaeroplane and over water flying.

It is almost impossible to imagine that progress which has continued steadily for four years will halt or be very much retarded in the fifth year. On the contrary it is logical to assume that the coming year will give to aviation more health and greater vigor.

Phenomenal mushroom leaps into fame and fortune by aviators undoubtedly belong to the past. That side of aviation is no longer the chief attraction to the thousands of interested people in the United States. The chief cause of the reduction of the amount of fame and money to be obtained by exhibition flying has been flying itself. It has come with the realization that the ability to fly may be easily and readily acquired by anyone and that winning prizes and world fame as an aviator are merely a matter of finding the opportunities.

The popular realization of how easy it is to learn to fly should soon place the aeroplane in the same point of view as the automobile, as far as operation is concerned. The number of schools of flying are increasing rapidly. Manufacturers who closely guarded their secrets a year ago are now offering the knowledge of flight to the others. Hundreds of people will learn to operate aeroplanes before summer comes. Before the close of the year the number of American pilots should be tripled.

The success of the hydroaeroplane will help this development greatly. Motor boat enthusiasts are only one class of sportsmen who are beginning to show an interest in the vehicle for rising from and alighting on the water. The great security of the hydro is a factor that will have its effect in the increase of the number of passengers and operators this year.

In the past the profits from exhibition flying have been so remunerative that it was difficult to get the eye of aviator and manufacturer away from it. Now they are beginning to look about them and to direct their energies to the introduction of the aeroplane, not as a performance, but as a recreation. The development in this field may be slow, but it will be a substantial development and a reputation made during the period will surely reap dividends in the future.

To bring about this change manufacturers and aviators should encourage passenger-carrying flights with a well-trying plane and a competent aviator. This will instill in the passenger a personal interest and desire, which should be kept alive by cross-country flying.

The immediate future of aviation lies largely in its development as a recreation, and to assist this development all who hope to profit by it should encourage safe passenger-carrying and cross-country flight.

The Mills Aviators will be installed in large and comfortable quarters in Chicago for the winter. They now have the following fliers in their camp: Nels J. Nelson, George V. Bacon, Fred Eells, Keane H. Keane, son of Thomas Keane, the actor, and Art Smith. The Mills Brothers themselves will go on the road next season flying Bleriot and Wright machines.

Clifford B. Prodder, an automobile dealer of Mandan, N. C., is about to take up flying at an eastern school.

THE DIARY OF FLIGHT

SATURDAY, DECEMBER 16.

Yazoo City, Miss.—The American Aviators flew. Oscar J. Brindley made the best performance.

SUNDAY, DECEMBER 17.

Elmhurst, Cal.—Weldon B. Cook and Didier Masson engaged in maneuvers with Battery A, National Guard of California.

Alameda Flats, Alameda, Cal.—Frank Bryant made flights in a Bleriot monoplane equipped with an Anzani power plant.

Ingleside Park, San Francisco, Cal.—Roy Francis made flights with passengers in a Gage biplane equipped with a Hall-Scott motor.

Stockton, Cal.—Thaddeus Kerns, an amateur, flew in a Farman-type biplane equipped with an Elbridge engine.

MONDAY, DECEMBER 18.

Mill Valley, Cal.—Weldon B. Cook flew here from Elmhurst, Cal., first circling the peak of Mount Tamalpais. He covered about 30 miles in all.

Hyde Park Field, Los Angeles, Cal.—Beryl Williams flew in his new machine, carrying a passenger on a 30-minute cross-country flight.

TUESDAY, DECEMBER 19.

Hyde Park Field, Los Angeles, Cal.—W. S. Eaton, D. C. DeHart and T. DeWitt flew.

WEDNESDAY, DECEMBER 20.

Lynn, Miss.—Harry N. Atwood, with Harold F. Moulton as passenger, made an 80-minute flight in a Burgess hydroaeroplane. He passed over Lynn, Marblehead, Swampscott, Saugus and Nahant.

Marblehead, Mass.—The regular school work went on, six flights being made in the Burgess hydroaeroplane.

Hyde Park Field, Los Angeles, Cal.—W. S. Eaton, D. C. DeHart and T. DeWitt flew.

THURSDAY, DECEMBER 21.

Providence, R. I.—Harry N. Atwood in a Burgess hydroaeroplane established what is claimed to be the world's hydroaeroplane duration record while flying 130 miles from Point of Pines, Mass., along the Massachusetts and Rhode Island coast lines.

Marblehead, Mass.—Clifford W. Webster and L. G. Hammond flew, taking motion pictures of a flock of wild ducks from a Burgess hydroaeroplane. There were five other flights by Burgess Company and Curtis aviators.

FRIDAY, DECEMBER 22.

Marblehead, Mass.—H. J. White, of Baltimore, a student at the Burgess Company and Curtis school, made a flight over Salem, Marblehead and Nahant in a Burgess hydroaeroplane. He had studied but 17 days. Five other flights were made by Burgess-Curtis operators.

SHOW ARRANGEMENTS BOOMING

New York, December 22.—There are already signs and indications that the Aero Exposition which the Aero Club of America proposes to hold in New York early next summer, will be the biggest thing of its kind ever attempted, either in this country or abroad. The A. C. A. is determined to stir up public interest in aviation. As an appeal to the popular imagination it is hoped that a big Parseval dirigible will be in New York during the show, and that passenger trips will be made around Manhattan or up and down the Hudson as far as Albany, 160 miles off, every day. Herman Metz, former comptroller of New York City, and now president of the

American Parseval Company, is going to bring over the big German airship, which will carry 20 passengers besides the engineer, assistants and pilot.

George F. Campbell Wood, is now in Europe, on behalf of the Aero Club of America, stirring up foreign interest in the show. He has so far been eminently successful. D. Irving Twombly, chairman of the exhibition committee, reports that the Italian Government has decided to send over one of each type of their military aeroplanes and a detachment of army officers. Another feature of the show will be an exhibit of historical aeroplanes and balloons. Each of the three Gordon-Bennett aviation cup winners will be on view, and also a number of American and European spherical balloons that have broken records or have taken part in other noteworthy flights. Wilbur Wright has promised to exhibit the first biplane ever fitted with a motor, and also his original glider. Efforts have been made to have a collection of some of the wrecks of machines that have figured in the tragedies of aviation. It is hoped that from these machines constructors will be able to learn something that will help them to build machines with a larger margin of safety. The general committee of the show is composed as follows:

Russell A. Alger, Alexander Graham Bell, William Berris, Robert J. Collier, James Elverson, Jr., Charles R. Flint, E. H. Gary, Alan R. Hawley, Frank S. Lahm, Charles M. Manly, Harold F. McCormick, Dave H. Morris, De Lancey Nicoll, Melville E. Stone, Jr., H. P. Whitney, Payne Whitney, W. K. Vanderbilt, Jr., Alexander C. Cochrane, Percy Chubb, Cortlandt Field Bishop, Ralph Pulitzer, Oswald Villard, A. G. Batchelder, Hart O. Berg, Max Fleischmann, Andrew Freedman, Peter Cooper Hewett, Charles E. Knoblauch, Clarence H. Mackay, A. Massena, Herman A. Metz, Frank A. Munsey, Hon. Alexander de Nubar, James D. Osborne, Herbert L. Satterlee, Cornelius Vanderbilt and A. B. Lambert.

AERO is asked to publish the following letter, which will be sent to all manufacturers of aeroplanes, motors, etc., in this country, in the course of a few days:

Aero Club of America.

Dear Sir:

There can be no question of the value of a great national aeronautic exposition in the advancement of the aeronautic industry, and we propose to organize and hold such an exposition at the New Grand Central Palace, May 10 to 18, 1912.

In undertaking this book, we will follow the precedent of the Automobile Club of America, which backed the automobile shows at a time when the automobile industry was not in a position to carry the burden. The show should be representative of the present and future of the industry, and our first step is to make inquiry of the manufacturers of their desires and ideas in connection with the profit.

We will deeply appreciate it if you will transmit to us your opinion regarding the general lines under which the show should be conducted, the policies to be pursued in this and the future shows that are planned for, and any other points that may occur to you.

It has been suggested that arrangements be made for the use of a flying field in the neighborhood of New York City where demonstrations can be given in connection with the exhibits at the New Grand Central Palace. We would like your opinion on this, and also to ascertain the most desirable method of exhibiting your products.

We desire your cooperation and feel that we should have it for our sole desire in undertaking the work is to advance and benefit the general industry.

Yours respectfully,

CHARLES WALSH,
Secretary.

Suggestions will be welcomed by W. Irving Twombly, chairman of the New York show committee, Aero Club of America, Madison avenue and Forty-first street, New York City.

WRIGHT ONLY MOTOR TESTED

New York, December 23.—So far only one engine—the Wright—has been tested in the competition for the prize of \$1,000 offered by the Automobile Club of America for the best aviation motor. On January 12 the Kirkham motor will be tested. Fifteen motors have been entered for the contest.

Temporary Office:
19 S. Broadway,
St. Louis.

E. Percy Noel,
Secretary.

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COMPETITION WILL BE 1912 FEATURE

Continued from page 255

"Stunt" flying should be discouraged at public aviation meets, as it was at the Chicago meet. In fact, at Chicago several fines of \$100 each were imposed upon aviators who went through needlessly foolish evolutions. From the aviator's standpoint "stunt" flying is most dangerous, and from the viewpoint of the promoter it is positively a disadvantage to have one man do hair-raising feats, for few of the rest of the men, and none of the sensible ones, will follow his example, with the result that the attention of the audience is distracted from what would otherwise be interesting exhibitions. Furthermore, in encouraging "stunt" flying, the promoter whets his audience's appetite for freak performances, with the ultimate result that they will not be satisfied with legitimate flying.

I cannot pass from the subject of exhibition flying without saying something upon the subject of altitude flights. I fail to see what good altitude contests can accomplish in future aviation meets, and they are unquestionably a source of danger to the aviators. Altitude flights have served their period of usefulness in the development of the aeroplane and its motive power. We have carburetion systems today which will operate as satisfactorily at a mile as on the surface of the earth, and if it had not been for altitude flights we should not have been sure of this. But from now on there is no necessity whatever of an aviator rising to an altitude of more than 5,000 feet, and personally I am in favor of a law to prevent flights of greater heights except by special permit for some legitimate object, such as scientific observation of the upper air strata.

Let there be quick climbing contests, where the height to be reached is limited, for these contests accomplish a very useful purpose in emphasizing the machines which climb the fastest, and rapid climbing is a desirable characteristic in any aeroplane. I believe, however, that it is nothing short of criminal for a promoter to hang up rich prizes in an altitude contest and thus encourage aviators, who may be either too ignorant or too daring, to fly higher than man has any necessity of going, and to fly at heights at which the danger is all out of proportion to the remuneration.

I have purposely left cross-country flights until the last, for it is questionable whether they belong under the head of exhibition flying. In my opinion, however, the rapidity of the future development of aviation in America will depend very largely upon the cross-country flights held here. There is no other form of flying which will bring out the various good qualities, or show up the weak points, of the aeroplanes as will extended cross-country work, and this should take the form of speed races in order to bring public interest to a maximum, and to discover the factors of safety possessed by the various aeroplanes taking part in the contest. An aeroplane capable of withstanding consistent cross-country operation is sure to be a reliable machine, much more so than one in which an aviator can do "stunts" at an exhibition. France, England and Germany have learned much from their cross-country flying this past season, and it is to be regretted that in America private parties, and even the large

metropolitan dailies, have not been sufficiently interested in the development of aviation in America to offer monetary rewards that aviators might be encouraged to attempt long cross-country flights. In spite of the fact that the expense of the trip was paid by the publicity department of a large packing house, I believe aviation owes them a vote of thanks for encouraging Rodgers in finishing his record-breaking trip, for through Rodgers' flight many were able to get their first view of the heavier-than-air flying machine, not to mention the world-wide interest aroused by such an extended voyage through the air. And I do not think anyone truly interested in the future of the aeroplane will begrudge the packing house who backed him in the publicity they received. It is indeed a pity, however, that the United States, with its wonderful wealth and resources, should be so outdistanced by foreign countries in the development of the world's greatest scientific marvel, and that our one greatest cross-country record should be simply the tail of a commercial kite. I sincerely trust that 1912 will bring forth more encouraging results.

SUNSET COMPANY OPENS NEW AERODROME

San Francisco, Cal., December 20.—The first flying field and school to be established in the vicinity of San Francisco was opened during the past month on the Alameda Flats by the Sunset Aviation Company, a new corporation consisting of Charles H. Paterson, Harry P. Robinet and John C. Eames. The aerodrome will be known as the Sunset Aviation field, and will be equipped in the most modern manner for the reception of students and amateur or professional aviators who wish a trying-out ground and convenient hangars.

The Sunset Company is organized for the purpose of manufacturing aeroplanes of any type, furnishing supplies and parts for all makes of machines, and conducting a school for the instruction of persons wishing to become aviators.

Land on what is known as the Alameda Marsh has been leased, and hangars erected. The field comprises 700 acres, and is the most convenient piece of land in the vicinity of San Francisco for the purpose. The grounds are within 30 minutes' ride by ferry, and electric trains of the Southern Pacific Railroad, and is on the lines of the Oakland Traction Company, giving easy access to all parts of San Francisco, Alameda and Oakland.

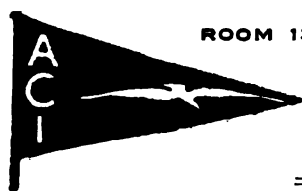
There are hotel and restaurant accommodations within a few minutes' walk of the grounds, and with the multitude of excellent hostels in the Bay Cities, students and others having business on the grounds can pick and choose their abiding places without fear of being held up in the matter of prices, or without being restricted in range of accommodations.

The hangars are erected with a view of permanency, and are perfectly weatherproof and sufficiently substantial to resist the attempts of would-be marauders. There will be shop accommodations on the grounds where all repairs can be made expeditiously, and electric light and power has been installed. Being on the shore of San Francisco Bay, the field affords facilities for practicing with hydroaeroplanes as well as with the strictly land machines. The offices and factory of the new corporation are located at 1714 Market street, San Francisco.

The personnel of the Sunset Company scarcely needs comment. John Eames is the head of the Eames Tricycle Company, which is the oldest aviation shop on the Pacific coast, being engaged in manufacturing aeroplane parts in Los Angeles and San Francisco from the inception of the aeroplane. Charles H. Paterson has had much experience as a manufacturer of aeroplanes of various types, and is an authority on propellers. The enterprise will be under the active management of these two, and their well-known business integrity will be sufficient recommendation for the success of the new enterprise. Robinet is a well-known mechanic, associated with the Eames Company.

There are already several machines on the grounds. Frank Bryant occupies a hangar with Tarnaban's Blériot equipped with a 30-horsepower Anzani motor; Gus Seyfried has a Blériot-type monoplane equipped with a 30-horsepower Darracq motor; Fortney brothers have an original biplane with a 30-horsepower Knox; Chas. H. Paterson has a Nieuport-type monoplane with a 30-horsepower Detroit Aeromotor, and the company has a standard Curtiss with Curtiss power plant.

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BULLETIN

To the Members of the Club:

The Aero Club of America desires to get in communication with manufacturers, aviators or accessory dealers, or those possessing historic relics of aviation in connection with the forthcoming aero show in New York.

If Chicago dealers will send their address and a notation of what they might be interested in exhibiting to the secretary of the club, we will see that they are transmitted to the proper officials in New York. Will you do this at once, please?

GROVER F. SEXTON,
Secretary.

Cash Prizes for Membership

Chicago, December 19.—Three cash prizes have been offered to members of the Aero Club of Illinois for securing new members between now and May 30, 1912.

They will be known as the Grand Prize and the "Totalization of Duration" prize.

Treasurer Charles E. Bartley has offered \$50 to the first member of the club who obtains 25 new, acceptable members for the club; if desired by the winner, Mr. Bartley will give in place of the cash an appropriate diamond and gold medal or fob costing \$50.

Col. Frank X. Mudd, head of the membership campaign force, offers \$100 for members getting new members before May 31.

The \$100 will be divided by the total number of new members, and distributed pro rata among those who have obtained the new members in accordance with the number they have secured. This adds a material comprehension to the ethical regard of satisfaction, which will attach to every effort made by a member of the club to increase its members.

1000 Members Wanted

Chicago, December 23.—Such is to be the record in the Aero Club of Illinois, it seems, basing such conclusion on the enthusiasm and aggressiveness indicated at the luncheon of the "captains" of the membership squad at the club room, Wednesday noon, December 20. The spirit of the sessions now being held is illustrated by action of Wm. Bartholomay, the well-known clubman, who, upon learning of the premium plans, promptly offered an accident insurance policy costing \$25 to the member obtaining the largest number of new members before the end of the campaign, May 30, 1912.

Frank X. Mudd's \$100 contribution is to be applied pro rata in whatever form is approved to all securing new members during the period.

Chas. E. Bartley's \$50 cash or diamond fob or medal offer was shot, starting the men from the tape on December 20, when several captains left the meeting precipitately, wasting only enough time to say that they would have the first 25 new members requisite for the prize in record-breaking time. Bartholomay and Conybear are setting the pace-making at

the start for the balance of the captains in the following field, all of whom, however, expect to finish strong:

Raymond Ackley,	B. J. Arnold,
A. J. Banta,	Wm. Bartholomay,
Chas. E. Bartley,	Joseph Basch,
Henry Bosch,	Everett C. Brown,
N. G. Conybear,	Chas. Dickinson,
F. C. Donald,	Chas. E. Gregory,
Lawrence Heyworth,	Sydney V. James,
Robt. G. McGann,	Albert Mohr,
A. B. Moler,	R. R. Reilly,
Frank E. Scott,	Grover F. Sexton,
James S. Stephens,	Edgar J. Uihlein,
N. H. Van Sicklen, Jr.,	F. W. Wentworth,
T. Edward Wilder,	Daniel Griffith,
B. J. Mullaney.	

The captains, under the direction of the colonel, have each selected four active members of the "Vim, Vigor, Victory" class to see that the proper number and kind of members are affiliated. The "army" is now in action, and reports already show great gains. The aeroplane corps is confirming beyond a doubt the impression of effectiveness gained in the recent contretemps between Italy and Turkey in Morocco.

Personal Paragraphs

"Off for China and Japan," appears in the remarks column of the Club Register for December 21, when Capt. Thomas S. Baldwin and Lee Hammond, members of the Aero Club of Illinois, paid their respects to headquarters at the Auditorium, en route, via the Golden Gate, to Honolulu, Hong Kong, Tokyo, and the principal cities in Polynesia. From all we learn it will be pretty "poor" 8,000 miles opposite us. Can't imagine flying upside down.

Charles C. Witmer, on the same day took the Golden State Limited for San Diego, Cal., promising alluring pictures of the biplane activities on the island.

Three hundred miles per hour sounds like very fair speed for a railway, but one of our Kansas City members called the past week with plans for the projection of such a public utility. That number per day seems all some can accomplish.

HYDRO MEN BUSY AT MARBLEHEAD

Marblehead, Mass., December 22.—H. J. White, of Baltimore, Md., who went aloft for the first time with Clifford W. Webster on December 5, today flew all over the city of Salem, and the towns of Marblehead and Nahant, Webster accompanying him as passenger, but having nothing to do with the control. It is expected that arrangements will be made within the next few days for White to qualify for his pilot's license, thus being the first Burgess hydroaeroplane operator to qualify on this type of machine.

Other flights during the day were made by Webster and Phillips W. Page, carrying L. G. Hammond, famed for taking moving pictures of lions and other wild beasts in Africa, and W. D. Denegre, Miss Denegre and Miss Converse, all of Manchester.

Yesterday Webster and Hammond went into the air with a moving picture camera, the mechanism of which was operated by the hydroaeroplane's motor by a system of gearing, Hammond's only duty being to press a button when he wished to expose a film. During the flight, which embraced Marblehead neck and Cat Island, a reel of film was taken while flying over a flock of wild ducks. This is believed to be the first photographs of birds in flight viewed from above, and is to be used in lectures on the flight of birds. In all, six flights were made during the day by Webster, Page and W. Starling Burgess, Webster and Page also making six flights on Wednesday.

A self-starting device designed by Greely S. Curtis of the company is in use on the company's hydroaeroplanes. A ratchet crank is attached to the left propeller shaft in such a way that the aviator can twirl the propeller and secure compression sufficient to start the motor. On the first trials the crank was found to be structurally weak, but the use of heavier metal has obviated this, the only difficulty.

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Notice to Advertisers

Beginning with Vol. III., No. 14, the issue of AERO dated January 6, 1912, rates for advertisements appearing in the AERO MART will be advanced in accordance with the following schedule.

Situations and Wants, 2 cents a word.

For Sale, Financial, Models and Model Supplies, Patents, etc., 5 cents a word.
Payable strictly in advance.

SITUATIONS VACANT.

EDITORIAL AND OFFICE ASSISTANT—There will be a vacancy on the staff of Aero early in January. Applications from young men will be considered. Give character, references, age, experience, if any, and amount of salary expected to start. Address The Editor, Aero, 9 South Broadway, St. Louis.

WANTED—Few young men to train for aviators. Construction and actual field practice. \$100 required. Aeroplane, 231 W. Sixty-second Place, Chicago.

SITUATIONS WANTED.

AVIATOR—Position as aviator or a backer. Am first-class builder, and have made 22 successful flights in Curtiss machines. R. L. Long, 1723 W. Congress St., Chicago, Ill.

INSTRUCTOR in flying; also teach construction; French method. Thoroughly capable in all branches; monoplane or biplane; three years' experience; owns two aeroplanes with motors; will consider taking charge of school for aviation; experienced in this capacity. Box 321, Mineola, N. Y.

MISCELLANEOUS WANTS.

CATALOGUES WANTED—NEW company, just formed, would like to receive catalogues from wholesalers in model supplies. Will consider agency proposition. W. G. Clegg, 6136 Washington Ave., St. Louis.

FACTORY—Wanted, small factory or shop with facilities for light woodworking, in good manufacturing location; middle west or near New York. Full particulars. Box 2476, Station G, Washington, D. C.

MOTOR—Wanted, 20-30-horsepower, three-cylinder Anzani motor, second-hand. State condition and lowest cash price in first letter. Address Lock Box 190, Fulton, N. Y.

MOTOR—Wanted at once, one or two second-hand Gnome motors, 50 or 70-horsepower. Address E. J. Romano, 1623 Summit Ave., Seattle, Wash.

CURTISS-TYPE—Wanted, two first-class Curtiss-type aeroplanes, must be in good condition and ready for business. M. D. Hanlon, 940 Plymouth Bldg., Minneapolis, Minn.

AUTOMOBILE—Will exchange 30-horsepower roadster automobile like new for monoplane or biplane, or high-class motor. What have you to offer? Reply, J. Morgan, 5344 Lena St., Germantown, Philadelphia, Pa.

BOYS' NAMES—Wanted, the names of all boys who are interested in the systematic advancement of scientific model building. Write and make yourself known to us. We have resolved to do our part this year in advancing aviation, and we want you to help push our plan. Send your name at once, The Aero Club of Muncie, Indiana.

FINANCIAL.

ASSISTANCE—Young man requires financial assistance to go to training school. Will make good terms on receipts from flights. 18 years old, good character, great enthusiast, can furnish first-class references. Ben Goral, 99 Logan Ave., Milwaukee, Wis.

HALF-INTEREST—A \$100 draft will purchase half-interest in my patent just issued, airship propellers, and a one-half interest in my vastly more valuable pending application for a patent. Homer A. King, Box 474, Colton, Cal.

FOR SALE.

AIRCRAFT SUPPLIES—Aeroplanes for sale and built to order; propellers, models and model stock; Chicago engines; flying models. Chicago Aero Works, H. S. Renton, Prop., 164 N. Wabash Ave., Chicago, Ill.

CURTISS-TYPE biplane—Price with genuine Curtiss power plant, \$2,500, for immediate delivery to any of the southern states except Florida, from Chicago factory. Write La Mar Callicott, Coldwater, Miss.

CURTISS RUNNING GEAR for sale, complete with three wheels, all tubing fitted, skid, brake, seat, rocker, steering post and wheel, also tail with rudder and front elevator. Are experimenting with new control. Will sell above, all or part. Write for prices to Aeronautic Supply Co., 6628 Delmar Blvd., St. Louis, Mo.

BLERIOT-TYPE—For sale Bleriot-type monoplane ready for power, \$125.00. Stickney, 2407 Sixth Ave., Moline, Ill.

MOTOR—For sale Curtis motor, double-cylinder, air-cooled, 7½-horsepower, \$125.00. Six-foot propeller, \$20.00. Albert Holz, 828 Fifth Ave., Cincinnati, Ohio.

MONOPLANE—For sale Hanriot monoplane ready for motor, big bargain, \$150.00; Curtiss-type, fantail with 50-horsepower motor, \$1,200.00, many extras; magneto, high tension Bosch, and other bargains; make offer. Box 195, care Aero, St. Louis.

CURTISS-COPY—For sale successful Curtiss-copy. Good reasons for selling. For picture of machine and information, address Russell Potter, 732 Pearl St., Joplin, Mo.

HARRIMAN—For sale, sacrifice 50-horsepower Harriman engine, \$500, cost \$1,500. Ten hours' total running. Earned \$5,000. Bosch magneto, propeller. Guaranteed perfect condition. Address Box 192, care Aero, St. Louis.

MONOPLANE—New Bleriot monoplane, almost completed, \$600. First-class material and workmanship used throughout. Can be seen any time. Write or call, M. R. L., 26 North Franklin St., Hempstead, N. Y.

MOTORS—For sale, 50-horsepower Gnome, \$1,500.00; 50-horsepower Roberts, radiator, propeller included, \$700.00; like new; guaranteed. Write Robert Beck, 161 West 36th St., New York City.

MOTOR—100-horsepower Emerson motor for sale, price \$850. This motor is probably the most perfect machine ever turned out by this company; has been run about four hours. Can be inspected in New York City. Address C. O. Hadley, Tarrytown, N. Y.

SUPPLIES—Buy from the largest, hence the best and cheapest. Everything for aircraft. For wheels, propellers, control pulleys, tanks, aluminum sockets, steering wheels, fittings, or what you need. Turnbuckles—all kinds and sizes. rust-proof Curtiss-type. \$5.85 per hundred. 8 stamps for sample. Heath Aerial Vehicle Co., Chicago, Ill. 6 stamps for illustrated catalogue.

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MODELS AND MODEL SUPPLIES.

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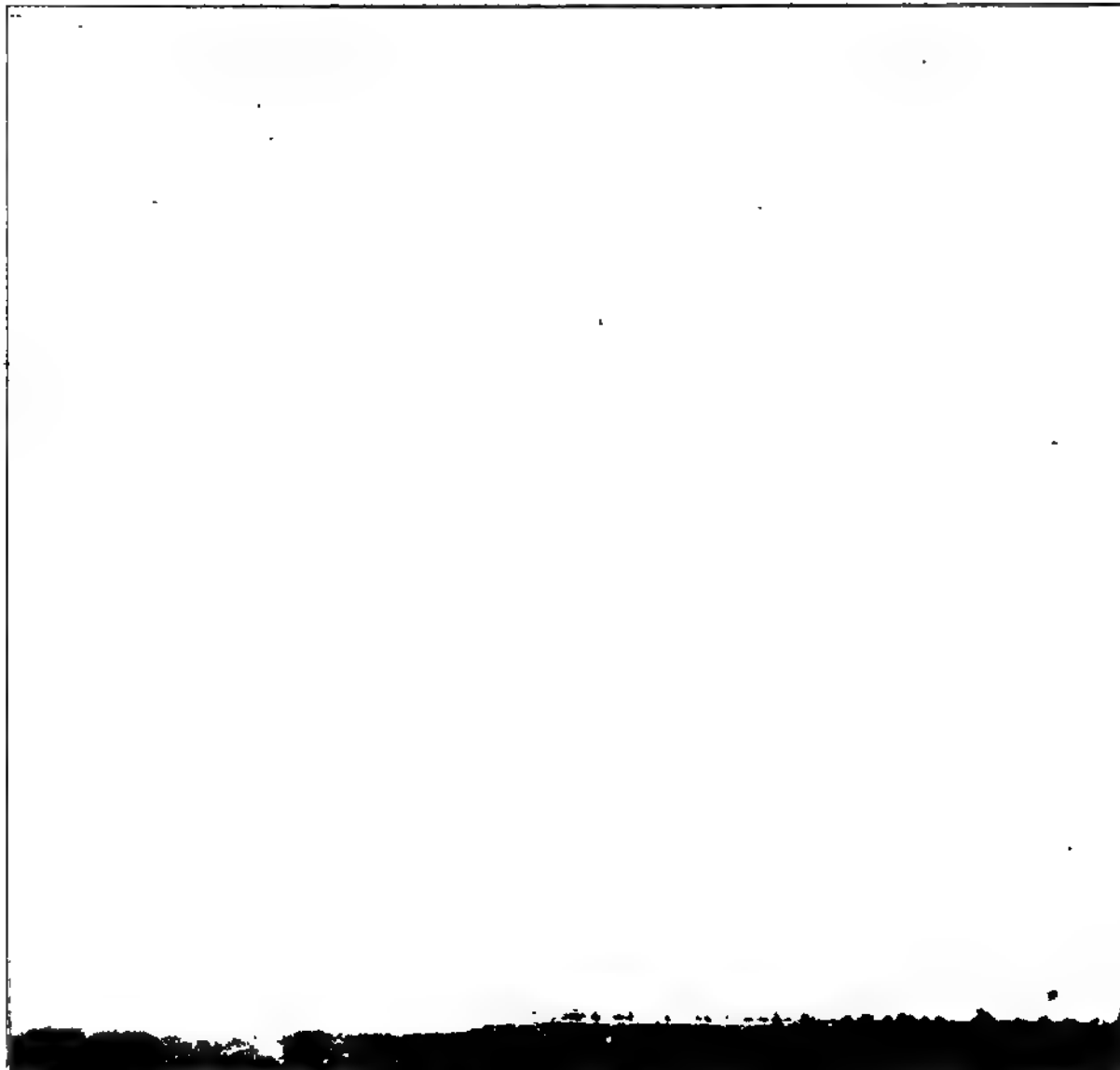
**AMERICA'S
AVIATION WEEKLY**

January 6, 1912

TEN CENTS

Vol. III No. 14

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WASHINGTON, D. C.

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Edited by E. PERCY NOEL

TWENTY ENTRIES ASSURED THIRD LOS ANGELES MEET

Los Angeles, Cal., December 26.—Twenty, and possibly 30, entries will be the attractive feature of the third international meet at Dominguez field, which will open January 20 and continue until January 28, under the management of Dick Ferris. The list of entries already received includes some of the best known fliers in America, while a number of the California fliers who have more recently obtained their pilot's brevets will be among the contestants. They will compete for prizes on a percentage basis. Fifty-five per cent of the gross receipts will be paid to the aviators.

Among those who have entered are Cal P. Rodgers (Wright), P. O. Parmelee (Wright), J. Clifford Turpin (Wright), Howard Gill (Burgess), Bob St. Henry (Curtiss), Charles F. Walsh (Curtiss), Bud Mars (Baldwin), Glen Martin, Holt Diddler Maason, De Kar, the Misses Blanche Scott, Harriet Quimby and Mathilde Moisant. Horace Kearny (Benoist), and Albert Elton (Wright) are also expected.

The American Aeroplane Company, the present lessee and owner of Dominguez field, with its full equipment, has decided to hold a meet of national importance, and has planned to conduct it on a co-operative basis, seeking to defray all expenses out of the receipts.

Contracts have been entered into between the California Aviation Society and the American Aeroplane Company, both of Los Angeles, wherein the American Aeroplane Company is to receive 20 per cent of the gross receipts.

Contracts have also been entered into with Will L. Frew and the California Aviation Society, both of Los Angeles, wherein Frew has agreed to advance a sum of money, not to exceed \$10,000, for the preliminary expense of this meet, with the understanding that he is to be reimbursed to the extent of the amount expended, not however to exceed the sum of \$10,000, from the first gross receipts of this meet. After Frew has been paid his preliminary expense money, and there has also been deducted the expenses of the various aviators incurred in reaching Los Angeles, as hereinafter provided, then all receipts, with the exception of the concessions, are to be considered as gross receipts.

To aviators shipping their machines from a distance, the following expense will be allowed:

Two hundred miles, \$50; 200 miles to 500 miles, \$100; 500 miles to 1,000 miles, \$200; 1,000 miles to 2,000 miles, \$300; 2,000 miles to 3,000 miles, \$400; 3,000 miles to 4,000 miles, \$500. For each machine now on the field, an allowance of \$10 will be made. For each machine shipped to the field from Los Angeles County, an allowance of \$20 will be made.

Each aviator will be permitted to enter one machine under

this schedule, but he may have one extra machine, to be held in reserve at his own expense, and extra hangar space will be provided for the purpose.

All gross receipts in excess of the sums as above provided for, will be set aside and divided into prizes as follows: Assuming that the 55 per cent of the gross receipts, less the guarantees as above provided, will amount to a total of \$100,000, the following list of prizes will be paid to the winning aviators, but in the event the gross receipts amount to over, or under, the above figure, then a proportionate amount will be paid to each winning aviator:

Grand totalization of duration.....	\$10,000
Daily totalization of duration.....	10,000
Daily altitude	10,000
World's altitude record	10,000
Speed event, three daily, handicap.....	30,000
Quick climbing	3,000
Alighting	5,000
Special and unusual events.....	12,000
Figure eight, daily	10,000

\$100,000

It further has been decided to give a night show on two or more nights, in connection with a spectacular fireworks production, and all contestants will be required to participate in these events to increase the total gross receipts, and to add to the total of the prize list.

Each contestant will be required to make at least one flight each day, five times around the course, and in case of failure to qualify, the aviator will be penalized a proportion of his guaranteed expense, and such sums of money will then be added to the gross receipts.

A committee of motor experts will be appointed, who, together with the technical committee, will thoroughly examine each and every machine entered in this meet. The general manager has the right to restrict the use of any machine that the committee may adversely report upon.

In the speed event each contestant will have his machine in readiness for a test flight by 9 o'clock of the morning of January 20, 1912. The technical committee will examine each machine and pass on same. The motor will then be started, and running under full power, all regulating devices controlling the speed of the aeroplane will be locked and sealed by the committee. The contestant will then make a test, or trial flight, five times around the course, following in a parallel line with the earth and flying as close to the pylons as is safe, and he will not, under any circumstances except in case of

Land and Water School where Witmer is in Charge

LOCATION OF CURTISS HYDROAEROPLANE SCHOOL AT MIAMI, FLA.

accident, deviate either to the right or left from the course marked out.

Judges will be stationed at each pylon, and any infraction of these rules will disqualify contestant, and he will not be permitted to compete in any of the speed contests until he has made the trial flight as above specified. The speed of each machine will be carefully noted by five judges, and the time taken by these judges will be computed as the speed of the machine.

After the trial flight each machine entered in the speed contest will be handicapped to equal the speed of the slowest machine entered in each event. No alteration will be allowed after the trial flight, but in case it becomes necessary to make any changes in equipment, each contestant will then be compelled to submit to another trial flight before he is allowed to enter the speed event.

Should any machine entered in the speed contests show an increase in excess of five per cent of the speed estimated on the trial flight, the aviator will be disqualified, and he must then submit to another trial flight before he can again enter any speed event.

CURTISS COMPANY REORGANIZED

New York, December 31.—The Curtiss Motor Company, with Glenn H. Curtiss as president, was incorporated at Albany, last week, for the purpose of taking over all Curtiss' enterprises including the manufacture of aeroplanes. The new company controls the Curtiss Aeroplane Company, which manufactures the Curtiss biplane, and the Curtiss Exhibition Company, which manages a number of the most prominent aviators, and which is the selling agency and foreign representatives for the Curtiss Aeroplane Company.

The first directors' meeting for the election of officers was held at Bath, N. Y. Arrangements were made at this meeting for the disposal of 500 shares of seven per cent cumulative preferred stock. The proceeds from the sale of this stock is to be utilized for improvements to the present factory at Hammondsport, N. Y., which needs to be enlarged to handle the increased business of the Curtiss Aeroplane Company.

A Trio of Promising Los Angeles Fliers

SAN FRANCISCO STARTS 1912 ENTHUSIASTICALLY

San Francisco, Cal., December 10.—There has been a decided improvement in the aviation situation in the vicinity of San Francisco during the past two weeks, and it seems as if this section is about to come into its own as an aviation center before many weeks. With dozens of amateurs, who are either building planes, or have completed machines lying in storage and in their workshops, and no place to properly try out there has been lacking the spirit of unity which must prevail before the flying game can progress in the vicinity. Now there are several projects on foot to start schools and establish flying fields.

The Aeroplane Corporation is progressing rapidly with plans for the opening of an ideal field at San Rafael, and the announcement of the formal opening is expected some time in February. Murray Tunison, who is at the head of the corporation, is building a plane along Nieuport lines and embodying some of his own ideas, and will install the first of an original engine which he has perfected, and which his company expects to start manufacturing soon.

The Motordome at Elmhurst, just outside of Oakland, has become the center of aviation on Sundays. Didier Masson and Weldon B. Cook entertaining crowds at the motor races every week. Though far from being an ideal aviation field, on account of its small size, there is sufficient vacant property outside of the enclosure to enable the aviators to get off the ground and land in safety. On Sunday, December 18, Cook and Masson engaged in maneuvers in conjunction with Battery A, First field artillery, National Guard of California, and engaged in a number of bomb dropping and signal stunts. Both aviators rose to altitudes of about 3,000 feet during the maneuvers.

On the same day Roy Francis, who flies a gage biplane with Hall-Scott power plant, made flights at the Ingleside Course in this city, and carried a number of passengers for short distances. One of those who was taken in an aeroplane for the first time was a little miss, 11 years old, who expressed great delight at her unique experience. Francis, although making very little noise, is progressing rapidly for an amateur, passenger-carrying feats being an almost everyday affair with him.

J. C. Mars is here with plans for a meet which is to take place on or about Washington's birthday, the proceeds of which are expected to go to Mrs. Ely, widow of the late Eugene Ely, who was well-known and exceedingly popular here. Mars has received assurances from all of the more prominent aviators that they will take part in such a meet, and many of them have signified their intention of paying their own expenses if they come. This, however, will not be allowed. Although both Mrs. Ely and Mars are expressing their great appreciation of the offers, they both declare that the expenses of the meet must come from the receipts and that it is not right that any hardship shall be worked on the men who are

offering their services for the occasion. If the plans of Mars carry there will be more than 60 well-known birdmen to compete for prizes which will be put up.

Officers of the United States Army stationed here are taking much interest in the benefit plans and have signified their intention of rendering all of the assistance possible. Ely was popular with the army men, and was an officer on the governor's staff and held a commission in the National Guard.

Mars has made arrangements to fly at Stockton on Christmas Day, and was received with open arms when he went there to make arrangements for his exhibition. He gave Stockton its first aviation exhibition, and has become very popular with the residents of San Joaquin city.

Frank Bryant, who is flying under the management of the Devaux aviators, is making splendid progress in a conservative way. His plane is a standard Curtiss, purchased from Clarence Walker, powered by a Curtiss power plant. He is making trial flights with a standard Bleriot monoplane and Anzani power plant which is the property of J. C. McMarnahan and is rectifying the machine for his brother, who will fill engagements for McMarnahan later in the season.

Bud Mars has a double, or at least he thought so for a short time last week. The Sacramento papers have been flourishing forth the news that Mars, "The renowned aviator, who made the trip around the world," was in Sacramento arranging for exhibition flights. At the same time Mars happened to be in Colorado, and not being twins could not possibly be in both places at once. On his arrival here he quietly investigated the Sacramento situation and found that Niel McAuliffe, a former helper of his, was passing himself off for Mars. On being called before the police of the Capital City, McAuliffe admitted his identity and was allowed to depart with a warning to desist from his practice.

Weldon B. Cook, the amateur aviator, who has been making a name for himself in San Francisco and vicinity, made a record flight on December 19, when he flew from the Motordome at Elmhurst, over Oakland and Marin County and, rising to a height of 4,000 feet, circled Mount Tamalpais.

The feat has been considered such a dangerous one that a purse of \$5,000, which was hung up a year ago, was withdrawn recently at the instigation of persons with humanitarian motives. Nevertheless Cook decided that he would make the trip, purse or no purse, and tuning up his motor at about three o'clock in the afternoon, started on his way. He dropped a letter for Benjamin Ide Wheeler, president of the University of California, as he passed over the college grounds, and the missile was delivered five minutes later.

Cook met variable winds and was compelled to ascend to a great height to get above the trades. After making his circle of the summit at Tamalpais, he returned to Mill Valley and made a landing in the dark. His motor stopped when he was about 3,000 feet up, and he was compelled to glide to the earth, which he did without mishap, except a broken elevator. The new part was immediately supplied by Paterson and the machine made ready for the return journey. He expects to make the return trip to Elmhurst on Friday.

Cook flies a home-made Curtiss-type biplane made by Maupin and Lantieri, of Pittsburgh, Cal., and has recently installed a four-cylinder Roberts power plant.

BRYANT CHRISTENS SUNSET FIELD

San Francisco, December 25.—Frank Bryant, the San Francisco amateur, gave Sunset field its formal christening yesterday when he made a number of flights over the new aerodrome before a large crowd of spectators. Bryant made six short flights yesterday in his Curtiss aeroplane. Today he varied the performance by taking his wife for a short spin after their Christmas dinner. He also made several flights alone without a passenger.

The Mercer County Agricultural Association, of Aledo, Ill., held an aeroplane exhibition this year as a free attraction at its fair, and drew 30,000. While no definite plans are made for next year, it is possible that Secretary W. D. Emerson will consider flights for the third week in September of next year.



FRANK BRYANT, DE VAUX AVIATOR

BALDWIN OFF TO MANILA

San Francisco, December 27.—Capt. Thomas Scott Baldwin and Lee Hammond of the Baldwin aviators sailed from San Francisco on the steamer China today, for an extended trip through the Philippine Islands and Straits Settlements. Baldwin and Hammond will fly at the annual Manila carnival from February 3 to 10. They carried three Baldwin biplanes equipped with eight-cylinder Hall-Scott power plants. Whipple Hall, who is one of the pioneers of aviation in California, will follow the pair on the next steamer and will act as business manager for Baldwin. Bud Mars, who is in San Francisco for the winter, was among those who went to the wharf and bid his former employer godspeed.

MARS GIVES STOCKTON EXHIBITION

Stockton, Cal., December 25.—J. C. (Bud) Mars gave an excellent exhibition of flying here today before a crowd of over 1,000 persons. The exhibition was held under the auspices of the Stockton Merchants' Association, and was voted a decided success in every way. Mars made the first aeroplane flight ever made in this city over a year ago, and many warm friends made on his previous visit turned out to witness his maneuvers. The first flight was at an altitude of about 400 feet, and comprised a circle of the grounds, while his second attempt consisted of a trip over the residence section of the city, at an altitude of over 1,500 feet. Mars is at present in San Francisco, where he is endeavoring to promote a meet for the benefit of Mrs. Eugene Ely.

COOK WINGS BACK TO ELMHURST

Elmhurst, Cal., December 23.—Weldon B. Cook made his return trip from Mill Valley to Elmhurst on December 23, encountering many difficulties before finally being able to get into the air. Cook flew from Elmhurst to Mill Valley early in the week and made the circle of Mount Tamalpais, being the first aviator to attempt and accomplish the feat.

On his homeward trip he encountered a number of strong air currents, which compelled him to delay his trip for three hours. Getting away, he was compelled to rise to a height of over 3,000 feet in order to make any progress, and for the greater portion of the trip was obscured from the spectators by huge fog banks.

He was met at the motordome by Diddier Masson in his Curtiss biplane with Gnome motor. They flew together several miles before they both landed.

Cook flies a home-made Curtiss-type biplane powered by a Roberts motor.

CURTISS MAN BACK FROM PORTO RICO

New York, January 1.—Manager Moore, of the Curtiss Exhibition Company, who has just got back from Porto Rico, where Lincoln Beachey has been flying, agrees with others who have recently visited our new island possession, that Porto Rico is not an El Dorado for aviators. One visit to an aerodrome seems to satisfy the natives' curiosity as to flying machines, and as the island has been pretty well flown over now, Porto Rico cannot be recommended to aviators looking out for business.

Moore reports that the deal by which Louis Paulhan becomes the agent for the Curtiss Company in France has been confirmed by a cable from the French aviator-inventor.

A. C. OF PA. TO HOLD ANNUAL MEETING

Philadelphia, Pa., December 28.—The annual meeting of the Aero Club of Pennsylvania will be held in the Bellevue-Stratford, on Friday, January 5, at 8 p. m. The polls for the election of officers will be open in room C from 4 to 6 and from 7 to 9 p. m.

At the last meeting the following were nominated for officers of the club: President, C. P. Wynne; first vice-president, Thos. Dougherty, Jr.; second vice-president, W. D. Harris; secretary, Geo. S. Gassner; treasurer, Lawrence Maresch. For directors (six to be elected) A. T. Atherholt, R. D. Carzon, R. H. Eisenbrey, Dr. S. C. Falls, H. B. Hankins, J. M. Holm, H. H. Knerr, H. M. Neely and W. J. Shedwick.

PROF. MOORE APPROVES OCEAN TRIP

Washington, D. C., December 27.—Professor Willis L. Moore, chief of the United States Weather Bureau, is the latest authority to approve of the German trans-Atlantic dirigible flight expedition of Dr. Paul F. Gans. Professor Moore compliments Dr. Gans on the fact that he has made use of the knowledge of the movements of the atmosphere gained by meteorologists. "You have learned," the weather man tells the airship pilot, "that in the tropics the winds are generally from the north-east, and that in the winter and spring months they are largely from that direction, with practically no cyclonic storms to interfere with the steady passage of an object in flight from the west coast of Africa to the West Indies. Former projects for traveling great distances in the air over water have been foolhardy in the extreme."

"I believe that a navigator who proposes to cross the Atlantic in the middle latitudes in a machine lighter than air should be restrained, just as we should, if possible, prevent a person jumping from the Washington monument, because there is no possibility of his effecting a safe landing. But you have avoided the mistakes of others, and have attempted to carry out this project in the only portion of the world where it is possible of accomplishment. I do not say that it will be easy of accomplishment; it will be difficult. But here again, as I learn from your prospectus and from your interesting personal description of methods and appliances, you have invented and are utilizing methods that are new for cooling the balloon and preventing undue expansion of gas during the heat of midday. Your devices for maintaining the equilibrium of your ship at a proper elevation by the use of sea water for ballast, by the use of streams of water for cooling purposes and by the use of other methods of humidizing the surface of your balloon and thereby cooling the air about your ship by evaporation are unique, and show that you are conversant with the physics of the air. I therefore believe that with your clear head and strong hand it is highly within the range of possibilities that you will be successful."

ATWOOD DRAWS 25,000 TO NARRAGANSETT

Providence, R. I., December 25.—Following his recent record-breaking flight from Point of Pines, Mass., to this city, Harry N. Atwood today and yesterday made exhibition flights at Narragansett park in his Burgess hydroaeroplane. The hydroplanes were detached from the aeroplane, and the usual wheel and skid alighting gear substituted.

The flights yesterday were made from the Rocky Point base ball park, before thousands of people. After a 15-minute flight, which set the crowd wildly cheering, Atwood descended, and bidding goodbye to the officials of the park, flew to the Narragansett race-track for the day's exhibition.

Today he made eight flights before 25,000 people, although only 2,000 paid admissions to the grounds, the remainder filling vacant lots, house tops, barn roofs and all other points of vantage. In the forenoon he made two flights, the first of 12 minutes, the second of six.

After an exhibition flight in the afternoon, during which he swung the plane to such an angle that the three-foot letters spelling his name on the lower supporting plane could not be deciphered, Atwood made five passenger flights. The first was with Robert J. B. Sullivan, who thus won the distinction of being the first inhabitant of Little Rhody to enjoy a successful flight over home soil. The other passengers were A. E. Barnett, a local amateur aviator, who was recently released from the hospital, where he had been confined as the result of an accident in an aeroplane of his own invention; Miss Myra MacEwen, of New York City, Mrs. John W. Craig, of Boston, wife of a member of the firm of Clayton & Craig, and Mrs. Herbert R. Dean, the aviator's hostess in this city.

NAVY TO TEST EFFECT OF WEATHER

San Diego, Cal., January 1.—The naval aviators at the Curtiss camp on North Island are about to make an interesting experiment with a view to ascertaining what effect the weather has on aeroplane cloths. It is proposed to cover a plane with three different kinds of cloth, in sections. These fabrics are (1) rubber filled, aluminum painted; (2) fibre filled; (3) oiled cloth. These tests were suggested when one day it was noticed that the oiled cloth on a hydroaeroplane was as tight as a drum one minute and the next quite slack.

CONDITIONS NAMED FOR BRITISH ARMY TEST

London, December 20.—At last the long-awaited conditions for the British military aeroplane competition, open to the world, have been published. These conditions run much on the lines expected, and are, in fact, closely modeled on the recent French competition. The total prizes amount to \$55,000. Two prizes are open to the world. The first is of \$20,000, and the second \$10,000. The owners of ten machines, which are submitted to all the flying tests and are not awarded a prize, are to receive \$500 for each machine so tested. The following conditions are those to be fulfilled by a military aeroplane:

1. Be delivered in a packing case, suitable for transport by rail, and not exceeding 32 feet by 9 feet by 9 feet. The case must be fitted with eyebolts to facilitate handling.

2. Carry a live load of 350 pounds, in addition to its equipment of instruments, etc., with fuel and oil for four and one-half hours.

3. Fly for three hours loaded as in clause 2, and maintain an altitude of 4,500 feet for one hour, the first 1,000 feet being attained at the rate of 200 feet a minute, although a rate of rise of 300 feet per minute is desirable.

4. Attain a speed of not less than 55 miles per hour (in a calm, loaded as in clause 2).

5. Plane down to ground in a calm from not more than 1,000 feet with engine stopped, during which time a horizontal distance of not less than 6,000 feet must be traversed before touching.

6. Rise without damage from long grass, clover or harrowed land in 100 yards in a calm, loaded as in clause 2.

7. Land without damage on any cultivated ground, including rough plough, in a calm, loaded as in clause 2, and pull up within 75 yards of the point at which it first touches the ground when landing on smooth turf in a calm. It must be capable of being steered when running slowly on the ground.

8. Be capable of change from flying trim to road transport trim and travel either on its own wheels or on a trolley on the road; width not to exceed ten feet.

9. Provide accommodation for a pilot and observer, and the controls must be capable of use either by pilot or observer.

10. The pilot's and observer's views of the country below them to front and flanks must be as open as possible, and they should be shielded from the wind, and able to communicate with one another.

11. All parts of aeroplane must be strictly interchangeable, like parts with one another and with spares from stock.

12. The maker shall accurately supply the following particulars, which will be verified by official test: (a) The horsepower and the speed given on the bench by the engine in a six hours' run. (b) The engine weight, complete (general arrangement drawing), and whether air or water cooled. (c) The intended flying speed. (d) The gliding angle. (e) Weight of entire engine. (f) Fuel consumption per hour at declared horsepower. (g) Oil consumption per hour at declared horsepower. (h) Capacity of tanks.

13. The engine must be capable of being started up by the pilot alone.

14. Other desirable attributes are: (a) Stand still with engine running without being held. Engine preferably capable of being started from on board. (b) Effective silencer fitted to engine. (c) Strain on pilot as small as possible. (d) Flexibility of speed; to allow of landings and observations being made at slow speeds if required, while reserving a high acceleration for work in strong winds. (e) Good glider, with a wide range of safe angles of descent, to allow of choice of landing places in case of engine failure. (f) It is desirable that the time and number of men required for the change from flying trim to road trim, or packed for transport by rail, and vice versa, should be small, and these will be considered in judging the machine. The time for changing from road trim and packed condition to flying trim to include up to the moment of leaving the ground in flight, allowance being made for difficulty in starting engine. (g) Stability and suitability for use in bad weather and in a wind averaging 25 miles an hour 30 feet from the ground without undue risk to the pilot. Stability in flight is of

great importance. (h) The packing case for rail transport to be easily dismantled and assembled for use, and when dismantled should occupy a small space for storage.

WOOD OBTAINS FRENCH EXHIBITS

New York, January 1.—The Aero Club of America announces that G. F. Campbell Wood has written from Paris that he has already obtained the display of three new type French aeroplanes for the aero show in New York in May. These machines are the Breguet biplane, Paulhan-Tatin monoplane and the 1912 Nieuport. The show committee has commissioned one of the foremost patent legal experts in America to render an opinion concerning the status of the various foreign exhibitors who manufacture machines. Several of the foremost aeroplane producers of Europe are deterred from signing applications by the fear that in exhibiting a machine, though not in flight, they might encounter lawsuits for patent infringement like other foreigners who have invaded America. The committee hopes to reassure them.

An act was recently passed in Washington admitting free of duty, merchandise to be exhibited in this country. As the machines and motors would be in bond during the time they are in this country, the Aero Club committee is satisfied that this fact will protect foreign exhibitors. The legal advice is, however, sought to make feeling of security doubly certain.

MOTOR CONTEST ENTRY LIST REOPENED

New York, December 30.—It has been decided by the Automobile Club of America to accept further entries for the \$1,000 prize contest for aviation motors. The entry list will not be closed for several months. When the conditions of the competition were first announced it was stated that the list would close September 1.

As soon as the latest decision was made known, the Fitzpatrick motor was entered. So far only the Wright power plant has been tested. On Tuesday next, Herbert Chase, who has charge of the club's laboratory, will put the Kirkham motor through the tests. Seventeen motors are now in the competition, the results of which are expected to shed some light on the relative merits of the principles of air and water cooling.

The Paul la Croix Company, of Broadway and Fifty-seventh street, has been appointed the exclusive sales agent in the United States for the Anzani motor.

The Queen Aeroplane Company will shortly commence work on an aeroboast, which has been designed by Grover C. Loening. This new craft will not be a floating aeroplane, but rather a flying boat.

Complaint in the second suit of the Wright Company against Claude Grahame-White for \$50,000 damages for alleged infringement of the company's patent rights, was filed in the United States circuit court this week. The complaint charges that without license or consent of the company, Grahame-White "wrongfully and unlawfully" used in giving exhibitions here and elsewhere Farman and Bleriot machines, which are alleged to be infringements of the Wright patents.

The Aeronautical Manufacturers' Association intends to open a bureau for the purpose of assisting out-of-town manufacturers who propose to exhibit at the aero show at the Grand Central Palace here in May. The offices of the association are at 1737 Broadway, New York City. At the next meeting of this body a proposal to acquire land near New York for the testing of aeroplanes will be discussed.

Charles K. Hamilton has bought from the Curtiss Company a 60-horsepower biplane.

Aviators' licenses have been granted by the Aero Club of America to Antony Jannus, of St. Louis, and Henry W. D. Reichert, of New York.

FRENCH LAWS OF THE AIR LANES OUT

Paris, December 2.—The first really serious attempt to frame legislation for controlling aerial navigation has just borne fruit in the publication of a set of rules of the air in the form of a decree of the French Minister of Public Works. This provides that owners of any aerial machine or apparatus, whether aeroplane, airship, or free balloon, must obtain a permit from the prefect of the district, as well as a navigation license, the latter being obtained from the Department of Mines, for the purpose of identification.

The license must bear a photograph of the machines to which it refers, as well as full particulars of it and the owner. All machines must bear number plates, similar to those used on motor cars, but, bearing in mind the international touring passes, in the number plates of machines belonging to French subjects, foreign subjects domiciled in France, or foreign firms having offices in France, a large "F" will be included in the sign.

Landings are only to be permitted on grounds specially set apart by municipalities, and aerial machines may be prohibited from passing over certain places after an order has been obtained from the government. Foreign military machines will not be allowed to fly in France without special permission, and provision is made for special regulations to be applied to public service machines. Explosives, arms, or war munitions, carrier pigeons, cameras, or wireless telegraphy apparatus may only be carried, providing special permits have been obtained. It is incumbent upon the pilot to keep a proper log book, containing full particulars of the doings of the machine, and these books must be kept for two years after the last entry.

Dirigibles will be required to carry three lights, a white one in front, visible for four kilometres, a green one at the right side, and a red one at the left side, the latter two being visible for a distance of two kilometres. This regulation is also applicable to aeroplanes; but, in view of possible difficulties, they will not be insisted upon at first. It is suggested that a single lantern might be fixed on aeroplanes showing green to the right and red to the left. Free balloons have to carry a single white light. Dirigibles and free balloons are also to be provided with a horn or similar warning instrument, but it is not proposed that this regulation should apply to aeroplanes, at any rate at first.

With regard to passing, the regulations provide that dirigible and aeroplanes shall give way to free balloons, and no machines should pass another within a distance of 100 metres in any plane. On preparing to land, a dirigible must fly a triangular red flag beneath the nacelle; and should a dirigible make an involuntary stop it will display a large black ball, while if the stop has been caused by bad weather two black balls will be shown, and if it is in distress the red flag will be put out in addition. An oscillating white light has to do duty for most of these signals at night.

PONTIUS DRIVES SMITH-HOHN PLANE

Houston, Tex., December 16.—The Smith-Hohn biplane, which is now undergoing trials here, is perhaps the first successful machine to be built in this city. J. J. Pontius is driving the biplane, which was built by Y. F. Smith and Guy Hohn of South Houston. It is of the headless-type, with Curtiss wheel and shoulder controls and with Curtiss-type ailerons hinged to the wings and Farman-type chassis. Several successful flights have been made, notably on December 4, when two passengers were carried.

An Indian rotary motor is used to drive an eight-foot diameter, five-foot pitch propeller and the machine travels at about 50 miles per hour. The planes span 30 feet with a six-foot chord and a 3½-foot camber. In all about 25 flights have been made. Pontius is the builder of a successful Curtiss-type machine which has flown many times during the summer.

LIEUT. MILLING RESTS IN NEW ORLEANS

New Orleans, La., December 22.—Lieut. T. D. Milling, of the Fifteenth Cavalry Aviation Corps, U. S. A., is here to spend the holidays with his father, R. E. Milling, a New Orleans attorney. Milling has been recently stationed at the army aviation field at Augusta, Ga.

TROUBLES DO NOT STOP BUFFALONIANS

Buffalo, N. Y., December 23.—There is considerable interest expressed here in aviation, and a number of inventors and builders are working constantly. The general public seems rather indifferent toward supporting any large exhibitions, so the Aero Club of Buffalo has never attempted to promote a meet worth mentioning.

"Flying is no longer a novelty here," said D. H. Lewis, president of the club, "and the people would not support any expensive exhibition. An attempt was made last year to get some of the expert flying men interested in such a venture, but their first demand was for a guarantee of \$50,000."

Last summer an aero meet was held at Fort Erie across the Niagara river from Buffalo, lasting several days, and while the attendance was large it is said that the management lost money. A Buffalo newspaper paid Lincoln Beachy to come over and fly about the city after the meet was concluded. The trip was successful, but when it was proposed in the Board of Aldermen to give the proprietor of the paper a vote of thanks, it was refused.

Secretary Lewis, of the Aero Club, is also secretary of the Automobile Club, and he evidently thinks that a powerful and flourishing body like that should get the bulk of his energies just now. There was some talk of having the aero builders use a part of the space at the automobile show, but this plan will probably be abandoned because the aeroplanes use so much space, and because most of Buffalo's inventors have attempted new models of unproved flying qualities.

The Frontier Iron Works of Buffalo has furnished the designs for an aeronautic engine which the Buffalo Pitts works is building. The Buffalo Pitts works, in addition, is building a full-sized aeroplane on its own account, which is to be equipped with the Gnome engine.

PAULHAN BECOMES PARIS CURTISS AGENT

New York, December 23.—Louis Paulhan has, through the Curtiss Exhibition Company, of 1737 Broadway, New York, sales agents and foreign representative of the Curtiss Aeroplane Co., of Hammondsport, signed contracts whereby he becomes the exclusive agent in France for the Curtiss aeroplane. Paulhan has purchased a Curtiss passenger-carrying hydroaeroplane with dual control, which will be delivered to him in Paris about January 15, 1912.

Paulhan and Madame Paulhan arrived in this country Monday, December 11. He came for the sole purpose of opening negotiations with the Curtiss Company for the exclusive agency in France of the Curtiss aeroplanes, and has been in conference with Jerome Franciulli since his arrival.

Accompanied by Mr. and Mrs. Franciulli they went to Hammondsport, N. Y., on Wednesday morning. There a demonstration of the Curtiss hydroaeroplane was given by Hugh Robinson. After Robinson's demonstration Paulhan became most enthusiastic. He exclaimed, "It is marvellous. It is as practical as a regular land machine. It is perfect." He stated that the Curtiss machine could be handled more readily than any other machine he had ever seen, and that its controls responded more freely.

The party returned to New York Wednesday morning, whereupon Paulhan immediately signed contracts whereby he controls the exclusive agency for the Curtiss aeroplanes and hydroaeroplanes in France.

FLIES SEVENTY MINUTES IN TAILLESS

New York, December 23.—F. E. Boland, while making a fuel test in his tailless biplane, the blue streak on Wednesday, December 20, flew for 70 minutes in a puffy wind, showing that his rudderless machine has other points of merit besides its simplicity. During the test the motor used five gallons of gasoline and two quarts of oil.

At the end of the 70 minutes, while flying at an elevation of 300 feet, the Boland motor stopped dead, having exhausted every drop of gasoline in the tank. Although headed for the Motor Parkway, Boland succeeded in making a fine landing.

For a running gear he has two wheels about a foot forward of the front bed-rail and provided with spring shock-absorbers, which may be released at will by means of a trigger, enabling the machine to land on skids if in a tight place.

ADVANCE OF AMERICAN AVIATION IN 1911 REVIEWED

Continued from last week

JULY.

On June 27, Lincoln Beachey flew over Niagara in a Curtiss. June 30 he flew from Waltham to New London without stop, and the next day, July 1, while Charles Terres Weymann was breaking speed records and winning the Gordon-Bennett cup for America at Eastchurch, England, Atwood drove from New London, Conn., to New York. By this time the New York fields were filled with fliers, and the army corps was busy at College Park, Md.

On July 10 the National Elimination race for the balloon team for the Gordon-Bennett cup took place at Kansas City, Mo., Lieut. Frank P. Lahm winning, with a distance of 480 miles in 23 hours 26 minutes. On July 30 St. Croix Johnstone, who had made his public debut in March with the Moisant aviators at Havana, increased the American duration record to 4 hours 1 minute 54 seconds.

AUGUST.

On August 5 the Curtiss double-control was first advocated for use on army planes, and on the same day Lincoln Beachey in a Curtiss won the New York-Philadelphia race organized by the owners of the Gimbel stores in New York and Philadelphia. At Mineola, on the same day, Miss Harriet Quimby qualified for her pilot's license, becoming the first woman pilot in this country.

The principal event of August was of course the Chicago International Aviation Meet, which took place August 12-20. The enormity and the success of this affair are still common talk, and may be passed over quickly. The following records were made during its ten days of flying: The world's altitude record, by Lincoln Beachey, on a Curtiss, of 11,578 feet; the world's weight-carrying record, by P. O. Parmelee, on a Wright, of 458 pounds; the American speed record, for 10 kilometers, for an aviator and a passenger, by Tom Sopwith, in a Bleriot, of 7 minutes and 50 seconds; the American speed record for an aviator and two passengers, over 5 kilometers, by Tom Sopwith, on a Bleriot, of 5 kilometers, in 6 minutes 56 2-5 seconds; the American speed record of aviator with one or two passengers, by Tom Sopwith, of 57.78 and 31.49 miles per hour, respectively, and the American duration record for an aviator and two passengers, by G. W. Beatty, of 1 hour and 18 minutes.

On August 14 Harry N. Atwood started his 1,295-mile flight from St. Louis to New York, and he finished 12 days later, on August 26, perhaps the most remarkable cross-country flight ever made in point of continuous flying and lack of accidents. He also figured prominently in the Harvard meet, which took place at Squantum, from August 27 to September 6. This meet contrasted strongly the earning power of aviators as compared with 1910, for while Grahame-White made \$30,000 during the first meet, he was forced to be content with \$5,000 this year.

SEPTEMBER-OCTOBER.

From September 23 to October 1 the Nassau Boulevard meet took place at New York. At this meet United States mail was carried for the first time. It was the first meet in which United States Army aviators took part. Just before the tournament opened on September 17, Calbraith P. Rodgers set forth on the most significant event of the year, the cross-continent tour. Robert G. Fowler had already made his first start in this contest on September 17.

The date of October 31 should not be passed without mentioning the death of Prof. John J. Montgomery, who fell 20 feet while experimenting with a glider. Just how valuable this man's work will be in the future will appear in time, but certain it is that he will be long remembered as one of America's most enterprising flight pioneers.

On September 30 the first free meet for advertising purposes, took place at the fair grounds, St. Louis, under the auspices of the Aero Club of St. Louis. In this exhibition mail-carrying formed the prominent part.

OCTOBER.

October had a sad opening in the death of Cromwell Dixon, at Spokane, Wash., on the second day of the month. But

at the same time Coffyn was developing a Wright hydroaeroplane at Detroit, Mich., and throughout the country great progress was being made. Rodgers was nearing Illinois on his trip across the continent, and exhibitions were numerous and profitable. October 5 saw the start of the Gordon-Bennett balloon race, which ended on the next day with the Berlin II, of Germany, Hans Gericke, pilot, and Otto Duncker, aide, the winners, with a distance of 470 miles.

On October 23, during the course of an exhibition at Kinloch Park, Mo., Howard W. Gill broke the American duration record, flying 4 hours 16 minutes and 35 seconds. A few days before Hugh A. Robinson had started from Minneapolis, on October 17, to fly down the Mississippi river in a Curtiss hydroaeroplane. The flight was stopped at Rock Island, Ill., on October 19, because of the failure of various contracted parties to furnish guarantees. October 19 marked the loss of another of our best pilots when Eugene B. Ely was killed while flying an exhibition at Macon, Ga. By the end of October Calbraith P. Rodgers had covered 2,299 miles of his long, cross-continent journey, and was in Austin, Tex. On October 19 Fowler made a second start across-country.

October 24 will be remembered for a long time because of the soaring experiments carried on by Orville Wright, near Manatee, S. C., and his remaining in the air ten minutes on a flight without a motor, hanging practically motionless in the wind. The week of experimenting at Manatee ended about October 27, when Orville Wright decided to return to Dayton. Another prominent event connected with the closing days of the tenth month was the beginning of experiments with the Burgess-Wright hydroaeroplane at Marblehead, Mass., and the week-end of flying held by Robert J. Collier at his home near Wickatunk, N. J. This last was the first private meet to be held in America.

NOVEMBER

On November 5, Calbraith P. Rodgers arrived in Pasadena, Cal., and was hailed throughout the world as the first man to cross the American continent in an aeroplane. He attempted to formally complete the flight and roll the wheels of his biplane in the surf of the Pacific about one week later, but fell near Compton, and so could not go through this ceremony until December 10, when he went over the last 12 miles of his trip from ocean-to-ocean.

November 4 was marked by the dissolution of the National Council of the Aero Club of America, in New York, when that body was found to be no longer necessary through the increased national feeling noticeable in its parent organization.

On November 13, the Aero Club of America held its annual election, placing Robert J. Collier in the president's chair. Three days later it was announced that the Curtiss factory had sold one of its hydroaeroplanes to a prominent Russian, and it was hinted that this was to be only the first of a long line of foreign orders.

On November 26, the Federation Internationale Aeronautique met, and one of its important acts was to award the \$10,000 prize offered in 1910 for the race about the Statue of Liberty at Belmont Park, to Claude Grahame-White, the English aviator, who was the first to complete the course.

DECEMBER.

Great regret was expressed throughout the country at the death of Tod Shriver, on December 5. Little has been done during this last month of the year beyond a vast amount of teaching and some exhibition flying. The next event of importance is the Los Angeles meet, which will probably start the new year with some new achievements.

Major H. B. Britton and Capt. George W. Mackay, of the Signal Corps of the Michigan National Guard, have asked the military board to purchase a Moisant monoplane. Capt. Mackay attended the Moisant school during the summer and qualified for his pilot's license. He wishes to give instruction to the other members of the corps.

E. PERCY NOEL, Founder-Editor

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The Editor is pleased to consider MS and photographs for publication, but only material that is likely to prove of interest to the readers of AERO. The Editor cannot undertake to answer technical inquiries except in the columns of AERO.

THE FUTURE OF AERO CLUBS

This is to be a year of readjustment. We cannot foresee what changes will come in these 12 months, but already there are indications that a new beginning will be made, a rock foundation laid for aviation to stand upon permanently.

The readjustment will have a far-reaching effect upon aero clubs throughout the United States—abroad it is a different matter. The first consequence will be a reduction of membership; that is, there will be many resignations in all American aero clubs this year.

Paradoxical though the statement may appear, these resignations will instill new life into the aero clubs that are destined to live long; to others they will be the death blow. But when the latter are gone we will almost feel like saying, "Good riddance."

There are not many aero clubs of the altogether worthless type. Nearly all have something in them that is worth while, worthy of the energetic labor of a few men to perpetuate. This "something" consists chiefly of an unselfish interest in the progress of aeronautics—whether it be concerned with the spherical, the dirigible or the aeroplane—and of a selfish interest in aeronautics as a sport. Of these two it is debatable which is the better, but upon one or the other the future of every aero club depends.

The false burden that nearly every aero club in the United States carries is that almost stigmatical distinction of existing as a civic organization. It is an advantage, of course, to every city to have a flourishing aero club within its gates, and undoubtedly no other kind of a club could do more to advertise a city; but that should be secondary, not the primary reason for existence.

Unless an aero club can stand on a different foundation than that of civic purpose, it cannot live very much longer. Because it is advantageous for every city to have an aero club, it should be in a measure supported by the business houses and others who benefit, particularly if the club makes a practice of conducting a meeting, or a public exhibition to attract visitors, at least once a year; but any business man, who has no interest in aeroplaning or ballooning, will soon begin to wonder, if he has not done so already, why he is even nominally an active member. The same disinterested person, or the concern that he represents, would on the other hand, be able to see the reason why he should contribute to help make any important public events conducted by the club—if not for profit—possible.

If, on the other hand, the aero club is a sporting organization in the best sense of the word, conducting one or several competitive meets, to which members will be admitted upon their club membership cards, the disinterested person looks at the matter in a far different light. Here is opened to him unusual privileges in connection with an event or series of events that the best people in his city will attend.

If only a flying field is maintained by the club where, almost any day, members may go for a pleasant afternoon, to see a new pupil make his first flights, another qualify for his pilot's brevet, an enthusiast starting off cross-country for the joy of flying; to take a ride with an aviator friend, around the field or off to someone's country place or a nearby golf club: anyone with the slightest interest in aviation will see the advantages of membership in the club that presents them. The same is true of similar advantages in connection with ballooning.

Members who can appreciate and enjoy these advantages will make up the aero clubs of next year, together with others who use, design or construct balloons or aeroplanes.

CORRECTION—A typographical error in the graphic table of progress in last week's AERO gave the world's duration record of 1908 as 0:20:23. It should have read 2:20:23.

THE DIARY OF FLIGHT

FRIDAY, DECEMBER 22.

Elmhurst, Cal.—Weldon B. Cook flew from Mill Valley today in his Curtiss-type with Roberts motor. Diddler Masson also flew.

SUNDAY, DECEMBER 24.

Sunset Field, San Francisco, Cal.—Frank Bryant, Curtiss with Curtiss engine, made six flights.

Paradis, La.—Fowler landed here, 40 miles from New Orleans, after passing over Boeuf, Morgan City and Baldwin, La. He started at New Iberia.

Providence, R. I.—Harry Atwood, Clayton and Craig aviator, flew.

Kinloch, Mo.—Horace Kearney, Benoist biplane with Hall-Scott motor, flew.

SATURDAY, DECEMBER 23.

Dominguez Field, Los Angeles, Cal.—Frank Stites, Frank Champion, Earl Dougherty and Homes qualified for pilot's certificates. Stites used a biplane of his own make with Macomber rotary motor; Homes and Dougherty used Walsh's old Curtiss-type with Hall-Scott motor; Champion used Ble-riot-Gnome. Beryl Williams also flew.

MONDAY, DECEMBER 25.

Stockton, Cal.—Bud Mars flew in exhibitions.

Sunset Field, San Francisco, Cal.—Frank Bryant flew, carrying Mrs. Bryant as passenger.

Providence, R. I.—Atwood, Clayton and Craig aviator, flew.

Marblehead, Mass.—W. Starling Burgess made 15-minute hydro flight, Burgess machine, carrying Miss Martha Ryther as passenger. Later he flew 30 minutes over Salem harbor.

TUESDAY, DECEMBER 26.

Marblehead, Mass.—Page took Harry H. Curtiss, of New York, for 12-minute flight in the Burgess hydro.

WEDNESDAY, DECEMBER 27.

Marblehead, Mass.—Greely S. Curtis took fourth hydro lesson with Phillips W. Page. Mr. and Mrs. Burgess took long ride over Salem and other towns.

Paradis, La.—Fowler, carrying E. R. Shaw, motion photographer, landed six miles from here on account of engine trouble.

THURSDAY, DECEMBER 28.

Ama, La.—Fowler landed here, 12 miles from New Orleans, in two feet of water in a rice field.

Albany, Ga.—Thornwell Andrews flew 12 minutes, carrying United States mail. He used a genuine Curtiss with Curtiss motor. At the conclusion of his flight he collided with a fence, badly damaging the machine.

FRIDAY, DECEMBER 29.

Ama, La.—Fowler started from handcar, but was forced to land after few moments in the air when spark plug blew out.

SATURDAY, DECEMBER 30.

Nassau Boulevard, L. I.—George Rogers flew remodeled Baldwin Red Devil with Hall-Scott motor.

YEAR ENDS QUIETLY ON LONG ISLAND

Nassau Boulevard Aerodrome, Long Island, January 1.—The only enthusiastic person seen around the flying field here during the last week of the old year was Manager Mark Reardon. Every day, sunshine or showers, Reardon was to be seen busying himself around Hangar Alley. There was very little flying. Oliver B. Sherwood was the most energetic aviator. Every morning and evening Sherwood had out his Church biplane, which has become a very familiar machine to the residents of New Hyde Park, Garden City, Hempstead and Mineola. Fred Schneider was another to be seen out nearly every day.

On Saturday, George Beatty, who had formerly been teaching Wright flying at Kinloch, Mo., and has lately been flying a Wright with Frontier eight-cylinder V-type motor at Buffalo, arrived at Nassau, much to the surprise of the aero colony. He expects to be here for a short time, giving lessons, and to return to Kinloch about January 20. A number of pupils

FRONTIER MOTOR IN GEORGE BEATTY'S WRIGHT.

are waiting to finish or begin courses of instruction with him there. Beatty is enthusiastic about the Frontier, which he says gives wonderful results in power and flexibility. The motor is similar to the successful French E. N. V. motor.

Claude Grahame-White will ship back to England on Thursday his Nieuport monoplane and Baby Grahame-White biplane. It is not likely that either Grahame-White or T. O. M. Sopwith will be seen in this country flying this year. Both Englishmen are afraid of the Wrights' lawyers.

Since Capt. Baldwin and Lee Hammond left for the Far East, everything has been very quiet at the Mineola field. Harry Eno, the Japanese, has started work on his hydroaeroplane. Carl Strom has done a lot more to his mammoth, all-steel monoplane. George Rogers, a San Francisco aviator, had out on Saturday the rebuilt Baldwin "Red Devil," in which Tod Shriver was killed at Ponce, Porto Rico, a few weeks ago. Pete McLaughlin hopes to leave for the West Indies and South America with two aviators to fulfill contracts which had to be postponed after Shriver's death.

HEAVY RAIN HINDERS ARMY SCHOOL

Augusta, Ga., December 24.—Very few flights were made at the Signal Corps Aviation School during the week ending December 23, on account of heavy rains for several days. Monday and Tuesday eight flights were made, having a total duration of 1 hour and 15 minutes, none of them of particular interest.

The heavy precipitation of Thursday and Friday caused a rapid rise of the Savannah river to flood stages, and it was feared that the river might reach the aviation camp. In order to be ready for such an emergency, the officers and enlisted men of the school turned out about midnight and prepared the machines for road transportation, so that they could easily be towed to high ground. All small articles of equipment were taken out of the tents and stored in the farm house which is used as a temporary barrack. The water rose over the fields to within a few hundred yards of the aviation camp, but it was not necessary to move any of the aeroplanes. Some streets in the low sections of the city near the river were under water.



Temporary Office:
19 S. Broadway,
St. Louis.
E. Percy Noel,
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BULLETIN

Club Quarters

The Aero Club will open quarters for the use of members and their guests, about January 15. The committee appointed by the board of governors to select a suitable place, and to furnish it for the use of members, has decided on a room on the sixth floor of the Columbia building, No. 606. The Columbia building is very centrally situated, on the south-east corner of Eighth and Locust streets, opposite the post office.

The club room will be open daily, except Sundays and holidays, and will be open in the evening for special meetings of committees.

Through the courtesy of AERO, which will occupy offices adjoining, American and foreign aeronautic publications will be on file for the use of members, but are not to be removed from the room under any circumstances.

The club will form a library of books, to which contributions are solicited.

There is room on the walls for a number of framed pictures of an aeronautical character. Donations of this kind will also be acceptable.

KEARNY QUALIFIES FOR LICENSE

St. Louis, December 26.—Horace F. Kearny, who qualified for his pilot's certificate on Friday, made a 48-minute flight yesterday afternoon in his Benoist biplane fitted with Hall-Scott motor. Kearny fulfilled the qualifications for license at Kinloch field, with A. B. Lambert in charge of the test. On his first landing he came within nine feet of the designated mark and on the second directly upon the spot. In making the turns around the pylones, Kearny cut sharp turns. His figures eight were of unusually even contour.

BROOKINS NOW FLIES A BURGESS

Marblehead, Mass., December 29.—The latest addition to the operators of Burgess biplanes and hydroaeroplanes is Walter R. Brookins, for whom a Burgess biplane and a Burgess hydroaeroplane have been shipped to Wilmington, N. C., where he is scheduled for an exhibition New Year's day. With Brookins, Harry N. Atwood, Howard W. Gill, Lieut. T. de Witt Milling, Phillips W. Page, W. Starling Burgess and Clifford L. Webster flying Burgess machines, the local company's product is flown by as representative a list as can be found in the country.

Much interest has been manifested in the motion picture flights made in the hydroaeroplane by Page alone. The camera was supported beside the aviator with the lens pointing downward and forward at an angle of about 30 degrees from the horizontal. The film reeling mechanism was connected to the crankshaft of the motor by a flexible shaft, which was turned on and off at the discretion of the aviator through the medium of a switch conveniently located on a

strut. Many interesting photographs of adjacent points of interest were taken.

Today's 55-mile wind afforded the aviators a new form of physical culture. The hydroaeroplane was tied to the platform of the marine railway with a half-inch rope, tall to the wind. The gale struck the supporting planes at alternate ends and warped the planes so violently that the levers either pulled the man out of the seat or tore themselves from his grasp. Despite the stiff wind, however, not a guy wire was strained.

ATWOOD FLIES HYDRO 130 MILES

Providence, R. I., December 21.—Harry N. Atwood descended here today on the waters of Narragansett Bay, after having flown a distance conservatively measured as 130 miles from Point of Pines, near Boston, along the Massachusetts coast to the northern entrance of the Cape Cod Canal, thence along the route of the canal to Buzzard's Bay, across the bay to Newport, and then up the bay to Providence, all the gasoline in the tank of his Burgess hydroaeroplane being exhausted as the tips of hydroplanes touched the shore.

Only the flight of Lieuts. Ellison and Powers on October 25, when they flew a distance of 138.2 miles in the dual-control Curtiss hydroaeroplane, exceeds Atwood's flight. The best previous distance flight by a lone aviator in a hydro was that of 104 miles by Hugh A. Robinson in his Curtiss on October 17. Atwood's time of 2 hours and 40 minutes establishes a new world's hydroaeroplane duration record.

Atwood left Point of Pines at 10:55 a. m., flying down Boston Harbor at a height of 2,000 feet. He passed over several shore towns, and, upon landing in Narragansett Bay, the pontoons slid onto a mud bank, floating without damage at high tide. Atwood was rescued by a reception committee in a boat and taken to a local hotel. He was chilled through by the biting rush of the winter wind, but declared he had enjoyed the trip immensely. The flight had consumed 12 gallons of gasoline, the highest altitude attained being slightly over 3,000 feet.

The hydroaeroplane was towed to a safe mooring at high water and on Saturday and Monday the aviator will give exhibitions at Narragansett Park.

Atwood yesterday made a flight of 1 hour and 20 minutes in the machine, which is the one recently purchased by the Clayton & Craig aviation school from the Burgess Company, and Curtis, starting from the latter's plant at Marblehead, and flying over Marblehead, Swampscott, Nahant, Saugus and Lynn to the Point of Pines. He was accompanied by Harold F. Moulton, who was nearly frozen, since he was not muffled up as was the aviator.

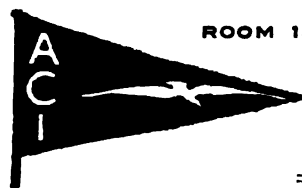
After a ten-minute flight over Marblehead harbor, Atwood found the engine working perfectly, and at 2:55 started on his long flight.

Flying down Marblehead harbor for several miles he turned and headed toward Lynn, passing over Swampscott at 3:15. Over Central Square, where thousands of people were watching him, he made two wide circles, and then started up the Saugus river with the intention of landing at Atwood Park, the aerodrome of the Clayton & Craig aviation school. Finding the tide running out fast, he turned and flew over Nahant and Bass Point and out over the ocean for several miles, then returned to Lynn, making a sensational volplane at Central Square, and finally landed near Point of Pines, the pontoons nosing into the sand so that the two men were able to step ashore.

COLLIER'S GUESTS FLY AT "REST HILL"

Wickatunk, N. J., December 18.—Such exceptional flying weather prevailed throughout the last week that O. G. Simmons was able to make ten flights, part of them with passengers, R. J. Collier's guests. Several photographs were taken by one of the passengers, two of the views showing Collier's home, "Rest Hill." Simmons was to fly for his pilot's license today, but as the wind was blowing at the rate of 37 miles per hour, he has decided to put the test off until tomorrow. James A. Blair, Jr., and R. J. Collier will be the official observers of his flights.

THE AERO CLUB OF ILLINOIS



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BULLETIN

To the Members of the Club:

The annual election of the Aero Club of Illinois will be held at the club office, room 130, the Auditorium, Chicago, Ill., January 16, 1912. Polls will be open between 10 a. m. and 3 p. m., and all resident members are entitled to one vote each. A printed ballot will be mailed each member of the club previous to the election.

The election will be for officers for 1912, and upon certain amendments to the by-laws, as hereafter to be published.

Following is the regular ticket of candidates for office as selected by the nominating committee:

For president—Harold F. McCormick.
For first vice-president—T. Edward Wilder.
For second vice-president—James S. Stephens.
For secretary—Harold W. Robbins.
For treasurer—Chas. E. Bartley.
For directors—Blon J. Arnold, Frank X. Mudd, Everett C. Brown, James E. Plew, Grover F. Sexton, Robert G. McGann.
Members' tickets may be nominated at any time until January 6, if the names are filed in writing with the secretary, each petition signed by 15 members in good standing.

Judges of election were selected, but the names will be withheld until the day of election. This bulletin will constitute full notice to each member.

The annual meeting will begin at the close of the polls.

GROVER F. SEXTON,
Secretary.

Amendments To By Laws

Chicago, December 28.—In the issue of AERO of January 13 there is expected to appear proposed amendments to the by-laws. They will cover several important subjects, and should be read carefully.

Briefly, they will endeavor to provide the following changes:

The board of directors, exclusive of the officers of the club, will be enlarged from six to nine, three to be elected each year for a term of three years. For the first period it will provide selection of the additional three by the present directors, after the latter have, by lot, divided themselves into two groups, one for three years, and one for two years, to get the order started.

Make a quorum of the directors seven instead of five.

Create the office of assistant secretary and make it appointive by the board, for life tenure, or until terminated by the board.

Ballots will be furnished at the time of voting, upon which the disposition of the amendments may be noted.

Aeroplane Runs Away

Chicago, December 29.—This is the story of a runaway aeroplane. It was not funny—for those from whom it ran away. It is a tale of the escapade of the Mustard Plaster, or yellow McCormick reverse curve monoplane—its antics, its mad charges, and its undoing.

Lieut. Andre Ruel, who has been "grooming the beast" for S. V. James, its trainer, brought it out today for a little exercise. When at last he had returned it to the shed—

but that is the story.

James officiated at the gas valve—from the ground. Ruel wound the 50 Gnome up. Ole Flottorp clung to a pinion.

All this was in the beginning. Then this happened:

An unexpected propeller pull yanked the machine away from the holders. Ruel, seeing it coming, dropped to the ground. With a wild snort, the yellowback reared on its hind legs, jumped over Ruel and started on a mad dash of freedom.

As it passed, it swiped Ruel on the head with its tail. Then the race began. It tore madly to the east. James ran to windward of it. The aeroplane, seeing him, flirited its tail in the air, and, turning, charged at him with an angry roar. James groundhogged it, and got a shower of castor oil as it jumped over him.

A white board on the north fence attracted it. So it started for the fence. Webber appeared on the field to the east, and it turned and chased him over the fence, and stood pawing up the ground and purring at him, as though its little gas-engine heart would break.

Spying Ruel trying to crawl underneath the fence, it tore after him and would have got him but for the presence of mind of James, the daring birdman. James got a pan of gasoline and started to lead the now docile craft back to the hangar. Then Chauncey Vought, another daring birdman, emerged from his hangar, leading out the McCormick-Romme umbrellaplane.

Rapidly opening and closing the umbrellaplane. Vought frightened the molasses-tinted cloudbot nearly into hysterics. In its terrified dash to escape, the despairing and fear-blinded golden-glow jammed into the north fence. A wing and its underpinning were carried away, and it sank to earth, the broken propeller clawing and tugging as it tried to dig into a gopher hole to avoid the approaching clothsaucer.

The 1912 Candidates

Chicago, December 30.—Men nominated by the nominating committee as officers for next year are known to most of the members of the club. To those who have not their acquaintance, the following facts may help to identify them:

Harold F. McCormick—Treasurer, the international Harvester Company; vice-president, Aero Club of America; was first vice-president of club last year and was vice-president International Aviation Meet Association which gave the August meet in Chicago. Has three aeroplanes for experimental purposes.

T. Edward Wilder—President, Wilder Leather Company; was second vice-president this club last year. Identified with Chicago Association of Commerce.

James S. Stephens—Consulting engineer; was engineer of this club last year; laid out club's flying field and the plant of International meet on lake front. Has biplane of his own design.

Harold W. Robbins—Business manager of the club; assisted Stephens on lake front design.

Chas. E. Bartley—Present treasurer of the club; attorney, and prominent in all athletic clubs in Chicago.

Sidney V. James—Chairman aerodynamics committee in 1911; foremost expert in America on theory of the aeroplane. Is engineer in charge McCormick's aeronautical experiments.

Blon J. Arnold—City engineer of Chicago and sponsor of principal municipal improvements here in late years; is subway expert.

Frank X. Mudd—Chairman club's contest committee; member for Illinois Aero Club of America contest committee and commissaire sportif of local aviation events; manager of a live-poultry transporting company; was in charge of contests in lake front meet.

Everett C. Brown—Official of Chicago Motor Club and Chicago Athletic Club; expert on mechanical racing technicality.

James E. Plew—President of club in 1911; manager White Automobile Company; one of earliest Chicago men interested in aviation; chairman of affiliated clubs committee, Aero Club of America.

Grover F. Sexton—Secretary of club in 1911; night city editor the Associated Press, Chicago office; has big monoplane.

Robert G. McGann—Consulting engineer; interested in concrete mixing machinery; is man who made lake meet possible, through efforts to get fliers to Chicago. Keenly interested in aviation, and has hydroaeroplane ordered.

AERO MART

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SITUATIONS VACANT.

STUDENTS—Wanted few young men to train for aviators. Construction and actual field practice. \$100 required. Aeroplane, 231 W. Sixty-second Place, Chicago.

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DESIGNING—Expert designing and highest grade drafting. Specialty, automobile and aeroplane motors. Green Engineering Co., Dayton, O.

AVIATOR—Situation as aviator; one year's experience; can design and build. Box 174, care Aero, St. Louis.

AVIATOR—Young man desires employment where he can learn aviation; amount of salary no object; two years' experience as mechanic; fair education; age 21. Best references as to character, ability, etc.; employed by Standard Oil Company at present. Address Aviator, care Aero, St. Louis.

MISCELLANEOUS WANTS.

MOTOR—Wanted at once, one or two second-hand Gnome motors, 50 or 70-horsepower. Address E. J. Romano, 1623 Summit Ave., Seattle, Wash.

FOR SALE.

AIRCRAFT SUPPLIES—Aeroplanes for sale and built to order; propellers, models and model stock; Chicago engines; flying models. Chicago Aero Works, H. S. Renton, Prop., 164 Wabash Ave., Chicago, Ill.

ANZANI—For sale, new motor, Anzani, 3-cylinder, air-cooled, 3½-inch bore, 4-inch stroke, weight 75 pounds, American-made; improved, copper cooling rings. Sell cheap or trade for monoplane or biplane. Also would like to get a set of Bleriot monoplane wings; what have you? George Kame, Alliance, Ohio.

CURTISS RUNNING GEAR for sale, complete with three wheels, all tubing fitted, skid, brake, seat, rocker, steering post and wheel, also tail with rudder and front elevator. Are experimenting with new control. Will sell above, all or part. Write for prices to Aeronautic Supply Co., 6628 Delmar Blvd., St. Louis, Mo.

MONOPLANE—For sale, Hanriot monoplane ready for motor, big bargain, \$150.00; Curtiss-type, fantail with 50-horsepower motor, \$1,200.00, many extras; magneto, high tension Bosch, and other bargains; make offer. Box 195, care Aero, St. Louis.

MONOPLANE—New Bleriot monoplane, almost complete, \$600. First-class material and workmanship used throughout. Write or call, Lansing, 26 North Franklin street, Hempstead, N. Y.

MOTOR—50-horsepower Harriman, never used. The proper thing for light motorboat. Must sell. First offer takes it. Capt. John Berry, 1223 N. Vandeventer Ave., St. Louis, Mo.

MOTORCYCLE—For sale, fine 3½ Yale single cylinder motorcycle, equipped with a Schebler carburetor, brand new, new departure brake. Machine cost \$210. Will sell at a bargain. Write me for particulars. M. E. Lipscomb, Jerseyville, Ill.

MODELS AND MODEL SUPPLIES.

MODEL GNOMES—Three-cylinder, 40c; seven, 75c; fourteen, \$1.25. These are imported. We are sole American agents. Largest weighs less than three ounces. Catalogue for stamp. Grand Rapids Aero Supply Co., Grand Rapids, Mich.

SCALE MODELS—Nieuport, Bleriot or Curtiss scale models, exact reproduction of large machines; two feet; weight one ounce. Price \$3.00, Curtiss \$5.00; ready to assemble, half price. Send for picture. K. A. Pouch, 83 Low Terrace, New Brighton, N. Y.

PATENTS.

PATENTS—Patents, gas engines, motor vehicles and aeronautical work a specialty. John O. Seifert, Patent Solicitor, 500 Fifth Ave., New York City.



1,010,842, December 5, 1911.—Frederick W. Baldwin, Toronto, Canada, assignor to Charles J. Bell, trustee, Washington, D. C. A flying machine embodying a plurality of separate independent concavo-convex supporting surfaces united with the concave sides toward each other, each of said supporting surfaces having its greatest depth from front to rear at its central portion and having a gradually decreasing depth from front to rear from said central portion to its lateral marginal lines.

1,010,932, December 5, 1911.—August F. W. MacManus, San Antonio, Texas. A flying machine having superposed body planes, a forward horizontal rudder mechanism, a swinging platform arranged forwardly of said superposed planes, connecting means between said horizontal rudder mechanism and said platform comprising a connecting rod, means for locking said platform in a rigid position, and means for moving said connecting rod toward said platform after the same has been locked.

1,010,986, December 5, 1911.—George Washington Thompson, Kingston, Okla. A flying machine embodying superposed lifting planes and superposed tail planes, the lifting and tail planes being spaced apart, the upper lifting and the lower tail plane being tilted at a different angle from the other planes.

1,011,031, December 5, 1911.—Ralph Cole, Norwalk, Ohio. A flying machine including a frame, a supporting plane, a track guide on one of said members, a roller on the other of said members, and ties securing said plane to said frame and holding said plane in pivotal relation to said frame.

1,011,083, December 5, 1911.—Hans Rottges, Bremen, Germany. A flying machine comprising a main body portion including a plurality of spaced apart aligned plane sections symmetrical parallelograms in cross-section, and a propeller disposed between said plane sections with its axis of rotation coinciding with the axis of symmetry of said plane sections.

1,011,124, December 5, 1911.—Robert J. Haskell, Louisville, Ky., and James G. Haskell, Washington, D. C. A flying machine embodying a pair of superposed supporting surfaces, vertically movable balancing planes hinged to the lateral margins of the upper supporting surface, brackets connected with and depending from said planes, and weights at the lower ends of said brackets adapted to abut against the lateral margins of the lower supporting surface to maintain the planes in normal position, said brackets and weights operating as pendulums, independently controlling the operation of the balancing planes when the machine tilts laterally in one direction or the other.

1,011,139, December 12, 1911.—William Edward Adams, New York, N. Y. A flying machine including a frame, a supporting

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plane in two sections, one on either side of the machine, each movably mounted on the frame, whereby they may be turned to present different angles of incidence to the air, and a second concave from tip to tip and of greater concavity at its rear than at its front, whereby greater angles of incidence are presented progressively toward the tips thereof and the air deflected in a stream toward the medial line of the surface.

1,011,143, December 12, 1911.—Severin C. Anker-Holth, Riverside, Ill. A flying machine embodying wings arranged substantially in the same horizontal plane, a pair of blades located on opposite sides of the longitudinal median line of the machine, said blades being rotatable upon vertical axes, and a propeller arranged adjacent to each of said blades and adapted to force air in a horizontal direction toward them.

1,011,256, December 12, 1911.—John P. Skripec, Cincinnati, Ohio. An airship embodying a suitable framework, moving propellers, pivotally supported elongated aeroplanes provided on opposite sides of the frame which are arranged parallel to this frame and have transversely arranged flaps adjustably supported, means to simultaneously adjust the position of all the flaps on an aeroplane and means to lock these flaps positively on their adjusted position.

1,011,354, December 12, 1911.—Charles T. Litchfield, Rosalie, and Ralph D. McKay, Tacoma, Wash. A self-balancing aeroplane, having a main body, horizontal balancing planes arranged at the extremities of the main body, a pair of pendulums, and means to connect the balancing planes and the pendulums, so that said balancing planes will be adjusted in accordance with the motions of the main body, and means to compel the pendulums to swing away from the center of motion in one direction and restraining them from passing such center in the opposite direction.

1,011,365, December 12, 1911.—Moses F. Patton, Hollins, Ala. An aeroplane provided with a frame, a seat for an aviator mounted on said frame, ailerons disposed on either side of said seat, and a means for moving said ailerons comprising an arcuate member secured to said frame adjacent said seat, a carrier slidably mounted on said arcuate member and

adapted to engage with the body of the aviator, and cords connecting said carrier with the ailerons and adapted to move the latter through the body movements of the aviator.

1,011,387, December 12, 1911.—William Stevens, Los Angeles, Cal. A flying machine or apparatus provided with a frame or body, arms depending from said frame or body and pivoted each at a common point both for lateral and longitudinal movement, a wheeled shaft pivotally connected with the lower ends of said arms, and springs extending body laterally and longitudinally between said shaft and said frame or body.

1,011,454, December 12, 1911.—Robert W. Linville, Los Angeles, Cal. An airship embodying a frame, a plurality of propellers disposed athwartships and of different diameters, each of said propellers consisting of a perforated plane with independent, non-contacting, reciprocatory guided valves, a motor whereby said propellers may be reciprocated, forward steering and inclining rudders, and means whereby said propellers may be inclined forward or backward.

1,011,761, December 12, 1911.—Jesse J. Dillon, Council Bluffs, Iowa. A flying machine embodying a framework, a suspension tube carrying the framework and extending above and below the same, a car supported upon the lower end of said suspension tube, propelling means upon the framework oppositely rotating lifting wheels at the top of the framework on opposite sides of the longitudinal center thereof, a staff entering the upper end of the tube, and projecting upwardly between and above said lifting wheels, a folding parachute carried by said staff, a sleeve slidably engaging the staff within the suspension tube, cords connecting the parachute with said sleeve and extending downwardly through the suspension tube, and means with which the said cord is adapted to be engaged to hold the parachute normally collapsed.

1,011,836, December 12, 1911.—John O'Leary, Cohoes, N. Y. An orthopter comprising a body having motive means therein, wings operatively held above the body and having means for opening and closing the same, approximately horizontal tilting deflecting means below the wings fulcrumed at their ends and having their opposite side portions free for movement, and means for propelling the machine.

Model Aeroplanes

Many Desire to Organize Aero Model Clubs

Persons desiring to organize clubs in their cities, which shall be affiliated with the American Aviation Association, are invited to send their names and addresses to this department. These will be published as below, and others interested may communicate with them. Notices of meetings called for organization, if received in this office not later than Monday of the week during which publication is desired, will be printed in this column.

The following have already expressed a desire to organize local clubs:

INDIANA.

Attica—J. Frank McThermond, Jr.

MASSACHUSETTS.

Lynn—Edwin Cotton, 58 Broad street.

CONNECTICUT.

New Haven—Harris Blumberg, P. O. Box 114.*

LOUISIANA.

New Orleans—Ashton Kern, 3104 Magazine street.*

ILLINOS.

Carlinville—George Underkoffer.

Chicago—Otto P. Streich, 4054 N. Hermitage avenue.

Ravenswood—E. R. Willard, 4852 N. Winchester avenue.

OHIO.

Canton—Robert Dulabahn, W. Yerrick.

Cincinnati—A. E. Bolender, 2321 May street.

Lorain—E. Graupner, 1010 Ninth street.

MARYLAND.

Govans—F. A. Ceale, Woodburne avenue.

RHODE ISLAND.

Manton—Joseph Pozeor, 655 Killingley street.

TEXAS.

Bells—E. R. Childress.

SOUTH CAROLINA.

Columbia—Terry Mitchell, No. 5, University of South Carolina.

MICHIGAN.

Houghton—Frank E. Beltown.

KANSAS.

Wichita—R. W. Ketchum, Y. M. C. A. building.

Bushton—Arion Shonyo.

NEBRASKA.

Osceola—H. W. Pike.

MISSOURI.

Fulton—Chas. M. Fee.

St. Louis—F. G. Vohs, 4744 Natural Bridge road.

Lee's Summit—Edward B. Valot.

COLORADO.

Denver—Henry L. Nicholls, 1225 East Twelfth avenue.

NEW JERSEY.

Trenton—John Hrnyak, 508 Washington street.

New Egypt—J. Hulme Woodward.

PENNSYLVANIA.

Pittsburg—Fred Fulgora, Box 356, North Diamond Station.*

NEW YORK.

Woodhaven, L. I.—Chas. Westminster, Atlantic and Benedict avenues.*

New York—Nathaniel P. Jocelyn, 44 Wall street, care R. F. Westerfield.*

Richmond Hill, L. I.—Wm. Livingston, Jr., 129 Cedar avenue.

Schenectady—W. P. Dean, 9 South Church street.

Rochester—Louis H. Friedman, 12 Henry street.

Philadelphia Club Organized

The organization meeting of the Philadelphia Aero Club was held December 20. It was decided to conduct a model contest the latter part of January. At least one prize will be awarded. The association is strictly composed of amateurs, and all non-professionals interested in aeronautics are invited to join. Information as to membership will be furnished upon request to the secretary, D. Earl Dunlap, 2298 Brown street, Philadelphia, Pa.

Aero Bibliography

A Motor that Burns Gunpowder

A catalogue has been received from the Co-operative Aero Association describing its cellulose turbine motor, which must be a rather interesting motor for use on models. The small engine burns gunpowder, which the makers point out as the most desirable fuel for models, as the gas it gives off has a volume 6,400 times that of its volume, while steam has but 1,600 times the volume of water. The fuel is entirely contained in the small cylinder which encloses the turbine, and it is only necessary to ignite the powder to make the engine run, delivering $\frac{1}{2}$ of a horsepower for from one to three minutes. The cylinder is made of aluminum, and the turbine is mounted in it on steel bearings. The motor is better, say the manufacturers, than the more complicated gasoline model engine, not nearly so expensive, and they also add that it is far and away above the steam or electric model motors because of their weight.

AMONG THE AVIATORS

At a recent meeting of the Aeronautical League, Chicago, Ill., John G. Rathbun gave an address on the subject of "Weight and Head Resistance in Aeroplane Design." Rathbun is editor of *Ignition*, an electrical magazine, but is a keen student of aeronautics, and has designed an all-steel monoplane in which no guy wires are used, the trussing being entirely enclosed. This he claims greatly reduces the head resistance, making a high-speed machine with low power.

William E. Gimson, of London, recognized as the top-notch among aviation mechanics of England, has hitched his professional wagon to the Long Beach (Cal.) star, Frank Champion.

Maxson Lillie gave public exhibition flights in Atlanta, Ga., Wednesday, December 20, under the auspices of the Atlanta Journal. His manager, Frank L. Albert, is enthusiastic about the south as an exhibition field at the present season of the year.

SMALL GROUNDS CAUSE SMASH-UP

Atlanta, Ga., December 30.—While flying last Thursday at Albany, Ga., under the auspices of the Phoebe Putney Memorial Hospital of that city, for a benefit, Thornwell Andrews, attached to the exhibition staff of the Lindsey Hopkins Aviation Company, of Atlanta, crashed into a corner of a board fence at one end of the base ball park, where the meet was held. He sustained a slight fracture of a small bone in the forearm of his right arm, a few minor bruises and a general shakeup, but was not seriously injured. The genuine Curtiss biplane which he was flying was quite seriously damaged by the collision, the surfaces, struts and front control framework being demolished.

Andrews' escape from serious injury was due to his presence of mind in heading for a corner of the fence surrounding the aviation field when he saw the accident was unavoidable. The mishap was due to three causes: Insufficient space for a proper landing, tricky and puffy wind conditions, and slight engine trouble. The absence of any one of the three would have prevented the accident.

The wrecking of the biplane and injury to the aviator occurred at the end of Andrews' first flight on which he had carried a sack of United States mail, and after he had given 12 minutes of exhibition flying. His work had won for him the admiration of the 1,500 spectators present, and as he sought to alight amid a demonstration of enthusiastic applause, the accident occurred.

There are Seven Times as Many Opportunities for Curtiss Aviators as for Others.

BECAUSE

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Queries Briefly Answered

[1001] C. S., Spokane, Wash.—Any practical method of lateral balance now in use is claimed to be an infringement by different patentees; the legal points involved have not yet been decided by the courts.

[1002] H. T., Danville, Ill.—Up to date there has been no question of infringement brought up in connection with the double propeller drive; this system was used over 15 years ago by Langley, and is presumably public property.

[1003] G. H. S., New York—A suitable propeller for your 29 feet 6 inch spread Bleriot copy would be 7 feet 6 inches diameter by 5 feet 6 inches pitch.

[1004] A. E. Hultzen—(a) It is not advisable to use square steel tubing for the longitudinal body members of the Bleriot-type monoplane. The steel does not possess sufficient elasticity, and in the event of breakage, is very difficult to repair. The use of wood for this purpose is almost universal. (b) The flying angle for the No. 11 Bleriot is about 7 degrees, if the total weight with pilot does not exceed 700 pounds. (c) The center of pressure of the wing at that angle is 30 per cent back from the leading edge. This center of pressure must not be confused with the center of gravity of the whole machine.

[1005] R. R., Chicago—It is impossible to answer your question from the information given; for instance, the center of pressure of the wing of an aeroplane varies with the ratio of length to breadth, angle of attack, camber, and the location of maximum camber from leading edge. All of the quantities must be known before the balance can be determined. We expect to have an article dealing with this subject in the near future.

[1006] T. H. T., San Francisco—Angle of chord of Wright machine is 3 degrees, main beam 2½ inches by 1½ inches, rear beam, 2 inches by 1¼ inches. Weight of model B about

850 pounds. Mostly ½-inch cable. Consult our advertising columns for plans.

[1007] H. M. G., Mason City, Ia.—Balancing an aeroplane is a very delicate operation, and to do it correctly all dimensions and weights must be given; this is especially necessary for the combination machine that you are building. The *Art of Aviation*, by Brewer, which we will forward, postage paid, for \$3.60.

[1008] R. E. B., Seattle, Wash.—(a) The Bleriot number 11 requires at least 110 pounds thrust, with a suitable propeller, for successful flight. If your motor will give this thrust and the total weight of the machine with pilot does not exceed 700 pounds, you will have sufficient power to fly. (b) More definite information is necessary in regard to motor, before we can answer.

[1009] D. F. G., Shiloh, Ohio.—(a and b) Camber 4 inches. (c) 10 to 12 feet, depending on area of tail. (d) Nieuport control, lateral balance by wing warping through foot lever; elevators moved by universally mounted hand lever, which when moved forward or backward, causes machine to go up or down; same lever moved to the right or left so moves rudder that the machine steers in the same direction. (e) Aero Club of America, 297 Madison avenue, New York, N. Y.

[1010] H. E. C., Vancouver, B. C.—An aviation engine should turn at least 1,000 to 1,100 revolutions per minute in order to get the most power from the least weight. The engine that you have would probably give about 18-horsepower, if it can turn up 1,000 revolutions per minute. Horsepower is the same whether used on land or water or in the air.

[1011] R. J. M., Denver—The average one-man parachute has a diameter of about 30 feet. One of 20 feet diameter, if total weight of same with operator does not exceed 200 pounds, will have a velocity of fall equivalent to falling from a height of eight feet without it.

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Louis.H. H. Ashlock, of San Diego, Cal., who will obtain a patent
on his fulcrum ballast flying machine, January 9, was in St.
Louis, January 1.While a model glider belonging to R. P. Timson was in the
air at Lynn, Mass., recently, it was attacked by a sparrow-
hawk, which left the marks of its beak or claws on the planes.W. D. Emerson, secretary of the Mercer County Agricul-
tural Society, Aledo, Ill., will consider a three-day exhibition
proposition for the third week in September. The field avail-
able comprises 55 acres.H. W. Graham, of Fort Dodge, Ia., who recently purchased a
Farman-type machine, plans to make a trial flight before long
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horsepower.George Wilds, of 279 Parker avenue, Detroit, Mich., is build-
ing a hydroaeroplane with wings designed to imitate the ac-
tion of those of a bird. The wings will also have a variable
angle of incidence.James Travis, a ranchman, living near Anaconda, Mont.,
is about to put a machine of his own building in the field,
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Vol. III No. 15

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AMERICA'S ATION W

January 13
1912

Edited by E. PERCY NOEL

THIRD PARIS SHOW AUGURS WELL FOR FUTURE

Paris, December 24.—To those who follow and believe in aviation, the most significant feature noticeable immediately upon entering the Grand Palais any evening during the first seven days of the French aero show was the enormous attendance. No automobile show ever drew a greater number of people into the Palais at one time. The crowds are made up of people of all kinds, with a great many women and children as well as men. In other words, a wide popular interest is shown in the aeroplane in France, and probably this is a criterion by which the future of aviation in other progressive countries may be judged.

Looking closer, at the machines themselves, one is pleased to find that nearly every exhibitor has as his object the desire to cleave to the practical—to make his product an apparatus for real use under the greatest variety of conditions possible. In carrying out this purpose the builders have made the 1912 aeroplanes more finished in appearance and in arrangement.

From the viewpoint of the designer, one sees that few of the manufacturers have overlooked the opportunity to eliminate head resistance by the streamline body and at the same time to provide seating arrangements which will afford the maximum of protection to pilot and passengers, from danger in case of accident and from the rush of wind under normal conditions.

There is also a noticeable reduction in prices of complete aeroplanes on the part of pioneer makers like Bleriot, who has put out a "popular type" monoplane to sell for \$2,200, with three-cylinder Anzani, ready to fly.

Although the third aero salon was opened to the public at 10 a. m., the big exhibition hall was comfortably filled before noon, and by 3 p. m. was packed so thoroughly with spectators that it was only possible to move through the broad aisles with the crowds; impossible to go about as fancy might dictate. The large attendance has continued ever since, and undoubtedly will continue until the close of the show.

As is customary, the president of the French republic formally opened the salon. Fallieres arrived at the Palais at 9 a. m. and made a round of the stands. At each he met and talked with the head of the house, and the chief aviators connected with it. He showed a sympathetic understanding to all and openly congratulated the more successful. He was guided by Robert Esnault Pelterie and Andre Granet, the *commissaire general* and the secretary of the organizing committee of the salon. The president's suite followed, consisting of the

various ministers, military authorities and the governor of Paris.

It was evident at a glance that monoplanes were more in preponderance than ever, there being 20 shown, as opposed to the 14 biplanes on exhibition. The monoplane seems to be heading its double-decked rival, for Farman, Sommer, and even Paulhan, once three of the greatest adherents to the biplane type, exhibit monoplanes.

With the biplanes, only four retain the disposition of the engine to the rear of the pilot, and these are the products of Maurice and Henry Farman, Roger Sommer and Voisin. The remaining 10 of the biplanes are of the engine-in-front type and consist of the machines of the following firms: Albatroswerke, Astra, Breguet (2), Caudron, Clement Bayard, Goupy, Savary, Sloan and Zodiac. It is interesting to notice the growing popularity of the fuselage as the central unit in the construction of biplanes. Of the 14 biplanes at the salon, nine incorporate the use of this feature in construction. These include the names of those firms mentioned above as representing the engine-in-front type of machine, with the exception of Savary and Caudron, and with the addition of Voisin, who is showing his Canard.

With reference to the form of the bodies themselves, there is a decided tendency in favor of bodies of the torpedo type. It is rather surprising that the advantages of this type, as concerns the reduction of head resistance, have not been seen before, but now that Tatin and Paulhan have jointly demonstrated that, using a body of approximately streamline form, and paying due attention to the subject of reduced head resistance, it is possible to attain speeds in the neighborhood of 80 miles an hour, we may confidently expect this type to gain great popularity.

All-steel construction is also coming steadily into favor, eight machines now representing this type of construction, viz., Breguet, Clement Bayard, Morane-Saulnier, Ponche and Primard, R. E. P., Sommer and Train. Of these seven, Sommer and the Morane-Saulnier combination have been converted to belief in the advantages of all-steel construction since the last aero salon in Paris. The Ponche and Primard monoplane is, with the exception of the main skids and propeller, constructed entirely of metal. Even the steel skeleton of the wings is metal-covered, sheet aluminum being employed. Steel, as is already known, plays a considerable part in the construction of both the Nieuport monoplane and the Voisin Canard.

A Tabular Description of the Aeroplanes Exhibited at the Third Paris Aero Salon

Constructor.	Type.	Principal Dimensions.			Weight of		Construction.	Landing Gear.	Controlling Surfaces.		Type of Body	Motor.		Propeller.	Price. \$		
		Length.	Span.	Area.	Speed.	Machine.			Useful Load.	Lateral		Longitudinal	h. p. and Type.			No. of Cyls.	Position
Albatros	Biplane--	34.1	43.4	430	56	925	660	Wood	W. & S.	W. a.	Rear elevator	Torpedo	100 Argus	4	Front	Albatros	6,000
Astra--	"	35.7	39.9	515	56	1550	880	"	"	"	"	Triang. section	80 Chenu	6	"	Astra--	5,600
Aviatik	Monoplane	31.2	41.	267	72	1000	660	"	"	"	"	"	70 Aviatik	4	"	Chauviere	5,000
Bleriot--	Do., Popular type	24.6	28.6	—	50	—	—	Wh.	"	"	"	Rect. section	30-35 Anzani	3 Y-type	"	Normale	2,300
1.3	Do., cross-country	25.1	29.2	162	59	530	440	"	"	"	"	"	50 Gnome	7	"	"	4,300
	Do., racer	21.3	23.	129	73	530	298	"	"	"	"	"	50 "	7	"	"	4,800
	Do., two-seater	27.	36.1	—	59	725	660	"	"	"	"	"	100 "	7	"	"	6,000
Borel--	Do., Aeronet	45.2	42.3	—	—	1540	—	"	"	"	"	"	100 "	14	Rear	Normale	—
	Monoplane	22.4	29.8	151	72	550	440	"	W. & S.	"	"	Square section	50 "	7	Front	Chauviere	4,400
Bristol--	Do., two-seater	26.2	39.4	215	50	595	660	"	"	"	"	"	70 "	7	"	"	5,100
Breguet	Do., two-seater	23.	33.6	196	68	680	440	"	"	"	"	"	50 "	7	"	Bristol--	4,750
	Double monoplane	29.8	44.5	355	59	1380	880	Steel	"	"	"	Torpedo	100 "	14	"	Chauviere	9,000
	"	29.8	44.5	355	56	1430	617	"	"	"	"	"	75 Chenu	6	"	Breguet	7,000
Caudron	Biplane --	21.6	24.	215	56	485	248	Wood	"	"	"	"	30-35 Anzani	3 Y-type	"	Normale	1,800
Clement-Bayard	"	32.2	36.2	300	56	880	550	Steel	"	"	"	Pent. section	50 Clement-Bayard	4	"	Reky Ferres	5,600
Dependusin	Monoplane (School type)	24.4	27.9	162	53	—	—	Wood	"	"	"	Square section	30-35 Anzani	3 Y-type	"	Rapid--	2,300
Farmen (M.)	Do., military	24.6	27.9	258	68	550	550	"	"	"	"	"	50 Gnome	7	"	"	4,600
	Do., two-seater	26.2	32.8	300	68	925	660	"	"	"	"	"	70 "	7	"	"	5,400
	Do., three-seater	24.6	42.7	344	68	1000	970	"	"	"	"	"	100 "	14	"	"	9,100
	Biplane (staggered planes)	46.0	36.1	376	53	950	660	"	"	"	"	—	70 Renault	8	Rear	—	5,000
Farmen (H.)	Monoplane	24.6	32.8	162	65	627	400	"	"	"	"	Square section	50 Gnome	7	Front	Chauviere	5,000
Goupy --	Biplane --	23.	23.	237	56	550	550	"	W. & S.	"	"	Rect. section	50 "	7	"	"	5,600
Kaufmann	Monoplane	24.6	34.2	151	87	574	330	"	W. a.	"	"	"	50-60 Anzani	—	"	Centrale	4,000
Loite et Olivier	"	26.2	34.4	215	75	965	386	"	"	"	"	"	60 "	7	"	Chauviere	4,000
Martay-Moonen	"	39.4	44.4	215	56	1000	330	Wood and steel	Wh.	W. a.	"	Skiff--	50 Gnome	7	"	"	4,000
Morane-Saulnier	Do., (school type)	19.7	29.5	151	56	574	375	Wood	W. & S.	"	"	Rect. section	35 Anzani	—	"	"	3,400
	Do., (racer)	19.7	29.5	118	75	630	550	Wood	Wh.	"	"	"	50 Gnome	7	"	"	4,600
Nieuport	Do., (military two-seater)	19.7	29.5	151	63	687	525	Wood	W. & S.	"	"	"	50 "	7	"	"	4,900
	Monoplane (school)	23.6	28.4	174	75	530	310	Wood and steel	"	"	"	"	25 Nieuport	2	"	"	3,600
Paulhan-Train	Do., two-seater	25.6	35.8	242	68	705	550	"	"	"	"	"	50 Gnome	7	"	"	5,200
Pouche and Primard	Monoplane	28.2	28.2	134	81	792	330	Wood	Wh.	N.	Rear elevator	Torpedo	50 "	7	Rear	Reky Ferres	5,000
R. E. P.	"	27.9	31.8	215	47	660	220	Steel and alumin.	W. & S.	W. a.	"	Open triang. section	35 Labor Aviation	—	Front	Chauviere	3,200
	"	25.2	39.4	215	68	880	440	Steel	"	"	"	Pent. section	60 R. E. P.	5	"	Reky Ferres	6,000
Savary--	Biplane --	36.1	46.	560	62	1320	660	Wood	"	"	"	—	70 Labor Aviation	4	"	(Chauviere (2) (2-seater)	7,000
Shan--	"	31.2	42.7	527	59	1100	660	"	"	"	"	Square section	100 Gnome	14	"	Chauviere	5,200
Sommer	"	29.6	39.4	323	56	640	496	Steel	Wh.	W. a.	"	—	50 "	7	Rear	—	7,000
	Monoplane	22.	28.6	174	67	574	440	Wood	"	"	"	Square section	50 "	7	Front	Chauviere	3,200
Train--	"	27.3	30.5	174	63	574	330	Steel	W. & S.	"	"	Triang. section	60 "	7	"	"	4,400
Vinet--	"	25.6	28.6	174	55	450	440	Wood	"	"	"	Rect. section	50 Anzani	5	"	"	3,600
	"	21.3	28.6	174	59	376	440	"	"	"	"	"	35 Barquand & M.	4	"	"	2,200
Voisin--	Biplane (Canard)	25.9	39.4	462	56	1210	550	Wood and steel	H.	Al.	Front--	"	70 Gnome	7	Rear	"	6,000
Zodiac--	Biplane --	38.6	49.2	344	59	1000	440	Wood	W. & S.	"	Rear--	"	50 "	7	Front	Normale	5,600

W. & S. = wheels and ailerons.

Wh. = wheels.

H. = hydroplanes.

W. a. = warping.

Al. = ailerons.

N. = Natural.

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MORE SHOW COMMITTEES NAMED

New York, January 6.—Prospective foreign exhibitors to the Aeroplane Show at the New Grand Central Palace, in May, are to be reassured against legal complications. The show committee of the Aero Club of America has commissioned one of the foremost patent lawyers in the country to render an opinion concerning the status of the various foreign exhibitors who manufacture machines which the Wright Company claims are infringements.

It is said that several French manufacturers are deterred from signing their application for space for fear they might be subjected to lawsuits by the Wrights. It is hoped that the opinion of the legal expert will be of such a nature as to dispel these fears. At the meeting of the show committee, W. Irving Twombly, chairman, on Friday, the following sub-committees were appointed:

HISTORICAL COMMITTEE.

Charles M. Manly, chairman; Carl E. Dienstbach, Alexander Graham Bell, Alan R. Hawley, A. Lawrence Rotch, A. F. Zahm, G. F. Campbell Wood.

PUBLICITY COMMITTEE.

Alfred Reeves, chairman; William Berri, A. G. Batchelder, Frank A. Munsey, James Elverson, Jr., Charles E. Miner, Otis F. Wood.

EXHIBITS COMMITTEE.

Charles E. Spratt, chairman; Chas. E. Knoblauch, E. Clarence Jones, Peter Cooper Hewitt, W. D. Gash, Russell A. Alger.

FOREIGN COMMITTEE.

G. F. Campbell Wood, chairman; Cortlandt F. Bishop, Frank S. Lahm, Hart O. Berg, Herman A. Metz, A. Massanet, L. E. d'Arcy, Hon. Alex. de Nubar.

GOVERNMENT COMMITTEE.

Major S. Reber, U. S. A., General James Allen, U. S. A., W. Irving Chambers, Capt. Chas. de F. Chandler, U. S. A.

\$50,000 ASKED FOR AERIAL MAIL

Washington, D. C., January 3.—As the result of numerous experiments in carrying mail by aeroplane during the past year, Frank H. Hitchcock, postmaster general, who has taken a deep personal interest in the subject since the first inception of the idea, urges an appropriation by Congress for that purpose during the coming year. The second-assistant postmaster general, who is in charge of mail transportation, and whose report has just been made public, asks for \$50,000 for the transportation of mails by aeroplane.

Ever since Postmaster General Hitchcock made a trip as passenger and mail carrier with Capt. Paul W. Beck, U. S. A., in a Curtiss machine, at Nassau Boulevard, last October, he has been an enthusiastic advocate of the aeroplane as a means of transporting mail over difficult routes. During the past few months he granted permission to a number of Curtiss aviators, including Hugh Robinson, Lincoln Beachey, Charles F. Walsh, Beckwith Havens, Charles C. Witmer, Eugene Godet and others, to act as special mail carriers, and these men carried mail bags at many cities throughout the country from the aviation fields to points near the post office. Among the cities where such tests were officially made are Rochester, N. Y., Dubuque, Ia., Fort Smith, Ark., Temple and Houston, Texas, Atlanta, Savannah, Columbus and Rome, Ga., and Spartanburg and Salisbury, N. C.

The record for long distance mail carrying is held by Hugh Robinson, who took a bag of mail at Minneapolis, Minn., and carried it on his long flight down the Mississippi river in a Curtiss hydroaeroplane as far as Rock Island, Ill. The distance covered by Robinson was 375 miles on this trip, and letters and first-class mail matter were put off and taken on at Winona, Minn., Prairie du Chien, Wis., Dubuque and Clinton, Iowa, and Rock Island, Ill.

NEW CORPORATIONS

Cromley Multiplane Company, Reno, Nev., December 14, to manufacture helicopters. Capital, \$500,000 with \$1,000 subscribed. Incorporators, C. D. Cromley, of Alameda, Cal., Alex. Logan, of San Francisco, Cal., and Dolphes B. Hannah, of Alameda.

LOS ANGELES MEET INTEREST GROWS

Los Angeles, Cal., January 2.—Under the management of Dick Ferris, plans for the aviation meet have assumed definite shape, and from present appearances it seems that the meet is not only going to be a success, but that it will establish the exhibition and meet business on a new basis.

The new arrangement of awarding a percentage of the gate receipts as prizes, instead of a definite amount, has caused considerable speculation among the aviators, at present on the coast, as to just what it is possible for them to win. This is especially the case among those who are flying Wright machines or machines licensed by the Wright Company, as in their case it is necessary for each one to pay to the Wright Company an exhibition royalty of \$100 a day, or a total of \$800 each. It is necessary for them to pay this royalty, no matter how little they may win in prizes, and this is causing many of them to think the second time before entering.

Of the fliers of Wright machines that are in Los Angeles, C. P. Rodgers is very seriously considering giving up the idea of entering the meet, as the dates it will be held conflict with the date of the Aero Club of America's banquet, at which banquet he has been invited to be one of the guests of honor.

Roy Knabenshue has charge of the exhibition business of J. C. Turpin and Phil Parmelee, who have here one of the standard passenger-carrying Wright biplanes and one of the EX or altitude machines. Since their arrival they have given a couple of exhibitions, up state, with rather indifferent results, which has made them somewhat leary as to entering. It is understood, however, that Parmelee is a sure entry, as he has already been offered the use of another standard make of machine. In fact, the rumor has it that he may possibly join the Curtiss team for this meet.

The publicity in the local papers is being very well taken care of by Bill Pickens, formerly press agent for Barney Oldfield and George B. Harrison, both of whom are covering the field in a very thorough manner. Already one hears people passing on the street and riding in the cars refer to the coming meet. Pickens is conceded to be one of the best and hardest working press representatives in the business, and in the past has invariably drawn good crowds to the automobile races that he has promoted, which will make his work at this meet most interesting to watch.

Howard Gill, Burgess aviator, and present holder of the American endurance record, has arrived, bringing with him a carload of Burgess planes, with which he has established a Burgess training station at the Dominguez field. These machines are of the standard Wright type, but are made stronger in a number of respects and are equipped with double control levers, so that either passenger can operate the machine, each using the right hand for the control of the warping lever.

BOOKING ORDERS FOR 1912 WRIGHTS

Dayton, O., January 6.—The Wright Company announces that it is ready to take orders for machines bearing the device for automatic stability. In addition it is announced that the Wright biplanes of 1912 can be furnished with silent motors and hydroaeroplane attachment, converting them into marine aeroplanes. A six-cylinder motor is also in preparation.

The automatic stabilizer will be applied at present only for the maintenance of lateral stability. As to the Wright motor for 1912, the six-cylinder engine is expected to produce at least 50 horsepower, as compared with 30 to 40 on the old biplanes.

MARTIN PLANS OCEAN VOYAGE

According to cables from London, James V. Martin, the Harvard professor-aviator, has informed the Royal Aero Club of the United Kingdom that he intends to make a flight across the Atlantic Ocean in an aeroplane next August, and desires to fly under the auspices of that institution. The club is considering his request.

Martin has had built for him a heavy hydroaeroplane, capable of carrying three persons. He expects to equip this machine with wireless, and to fly from Newfoundland to Ireland. Martin has never made a very long flight over land or water.

HOW TO DESIGN A MODERN AEROPLANE

By E. R. Armstrong.

This, and the following series of articles, is an attempt to give in a concise, practical form, the present day knowledge of the fundamental principles of aeroplane designing, and their application to concrete examples. Many sources of information have been consulted, but in the main the following articles are based on the results obtained by the laboratory committee of the Aeronautical Society of Great Britain in the wind tunnel at East London College; the researches of Gustave Eiffel, of Paris, France, made in his aerodynamic laboratory, located at the base of the Eiffel Tower, and some experiments carried out with full-sized machines at the aerodynamical laboratory, of Vincennes, France.

It has been the custom, made venerable by age, for all writers on this subject to preface their remarks by reference to the writings of Sir Isaac Newton, and other lesser lights of more modern times, and while from our humble plane we venerate those men of great intellect, and envy them the faculty, with which they visualize their mathematical deductions, we observe that the history of aviation fails to show that any considerable advance was made by other than the practical man; and it is a fact beyond dispute that the purely practical constructor, unacquainted with a single algebraical symbol, must necessarily possess, all unconsciously it may be, scientific knowledge of a very high order, to be able to design and build a successful aeroplane. It is the object of this series to make available correct information, arranged so that it can be applied by the purely practical man.

The very first principle of aeroplane designing usually treated is resistance to the normal plane; or, to speak practically, head resistance. Lack of information in actual figures on real areas has in the past led many experimenters astray.

Practically all the power necessary for flight is absorbed by the head resistance. By head resistance we designate the resistance to advancement caused by the various parts of the aeroplane. The struts, guys, spars, body, landing gears, other accessories, and each little exposed surface plays its part in absorbing the power of the motor.

Keeping in mind that a modern motor of 50 horsepower will only give a standing thrust of from 350 to 400 pounds, with a propeller suitable for actual flying, and that at the normal speed of flight this thrust falls to less than half of the amount; so that when an aeroplane has attained its flight speed, the thrust per horsepower, even at the highest value, does not exceed three pounds per horsepower, if an arrangement of parts can be made to reduce the head resistance only three pounds, a saving of one horsepower is attained.

By reference to Fig. 3 it is seen that at even the moderate speed of 50 miles per hour, that less than one-half a square foot in area is required to set up a resistance of three pounds.

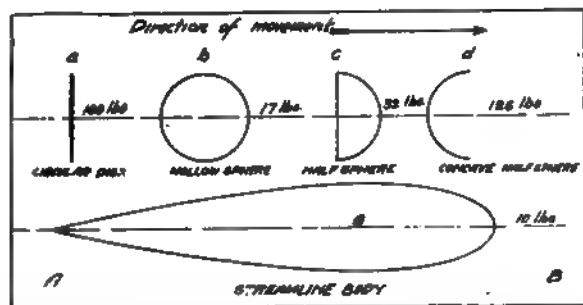


FIG. 1

We wish to impress on all constructors the vital aspect of head resistance, and the necessity for its elimination wherever it is possible. As practical examples of head resistance and its reduction, the following results, obtained by actual experiments, are notable. Consider a flat disk *a*, one foot in diameter, as shown in Fig. 1, in a vertical position to the line of advancement A-B. Now if the disk is given sufficient speed in the direction of the arrow, Fig. 1, parallel to line A-B, to produce on its surface a pressure of 100 pounds, the

pressure on a hollow sphere, as at B, of the same diameter, and at the same speed, would be 17 pounds. If the sphere were cut in two equal parts and the convex surface of one half placed to the front, as at C, the resistance at the same speed would be 32 pounds; if the concave side of the half sphere is then turned to meet the air, as at D, at the same speed, the resistance will be 126 pounds; again, if in place of a sphere, a more streamline form of body be used, as at E, having the same area, the resistance may reach as low as 10 pounds under identical conditions.

The above facts can be the basis of a great deal of thought on the part of any reader, showing, as they do, the importance of rounded or streamline entering and trailing sections of any part used in aeroplane construction exposed in such a way as to contribute to the sum total of the head resistance.

It is somewhat of a difficult task to photograph the streamlines taken by the air passing around different objects, but this has been done by H. Coanda, and in Fig. 2 are given reproductions of the disturbance set up by different objects when placed in an air current; that part of the object which meets the air first is called the entering edge, and that part of the object which leaves it last the trailing edge.

FIG. 2

A illustrates resistance to the normal plane, which is more commonly called head resistance. It is readily apparent in what a disturbed condition the air behind the plane is left; it is a veritable whirlwind on a small scale.

B shows the streamlines around a circular rod or strut. It will be noticed that the disturbed area does not extend nearly so far back as for the normal plane.

C indicates that the curved outlines of B produce less disturbance than triangular streamlines, even if the angle of the entering edge of the latter is much sharper.

D shows almost perfect streamline form. The disturbance is almost nothing, and the actual head resistance is 90 per cent less than that experienced by the normal plane A.

E shows D reversed, with the sharp edge as the entering edge. By comparing D and E, the necessity of the blunt entering edge, and tapering trailing edge is forcibly brought out.

F shows that for the least disturbance, all forms of hollow curves must be avoided. Compare F with D.

From what has previously been said, we can lay down what might be called the first principle of aeroplane designing, which in a practical way might be stated as follows:

It is important that all struts, spars and braces exposed to the direct current of advancement be made of streamline form, having as nearly as is practical, the proportions shown in Fig. 1 by C.

Every exposed member of rectangular section should have all corners rounded to a somewhat semi-circular shape.

In order that the exact effect of head resistance for different areas may be obtained without calculation, we give below, in Fig. 3, a diagram showing the head resistance in pounds per square foot of surface, at different speeds, in miles per hour. For areas greater than one foot, multiply the

result found for one foot by the number of square feet. For areas less than one foot, multiply the result found for one foot by the fraction of a foot desired.

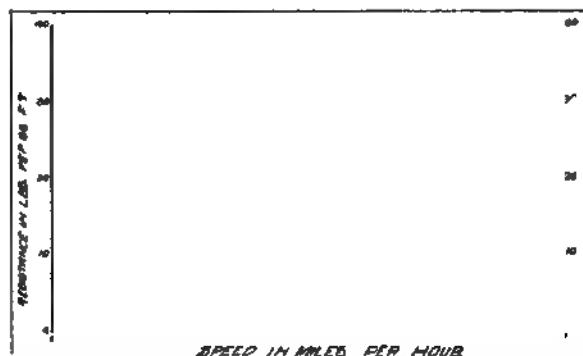


FIG 3

The results given in the above diagram are based on the most favorable conditions, so to speak, as it has been found that any given area will have the least resistance when it is in the form of a square; for instance, if the exposed surface should happen to have great length compared with its width, the resistance as shown above would be increased as much as 45 per cent; this relation, which is very important, is given in Fig. 4, which shows how the head resistance of a normal plane increases with the increase of the length to breadth ratio; this increase is given in per cent of that resistance met by a plane surface of square section.

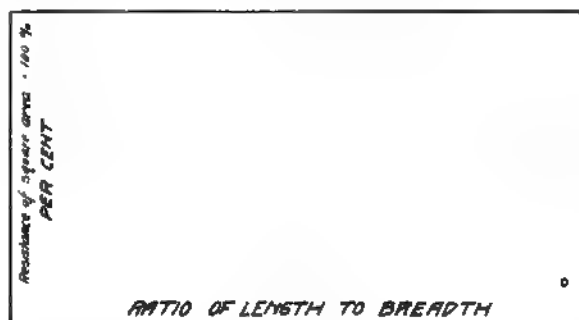


FIG 4

For instance, if it is necessary to find the head resistance of a honeycomb radiator at 50 miles per hour, which is 12 inches by 24 inches, minus 12 inches by 24 inches, equal two square feet, from Fig. 3 we find that the resistance for an area of two square feet is 14.8 pounds, but this resistance is based on a square area.

The ratio of length to width of radiator is 2 to 1; on Fig. 4 we find that for a ratio of 2 to 1 the resistance is 103 per cent. If 14.8 be multiplied by 103, we have 15.24 pounds—resistance to a flat area two feet by one foot. But, as will be shown subsequently, the resistance of a honeycomb radiator is one-half of its solid area, so that the real resistance encountered by the radiator will be half that found as above, or 7.62 pounds.

Again, we will calculate the resistance of a strut such as is used in a biplane of the Farman type. Assuming that the strut is 6 feet 6 inches long by 1½ inches wide, the head resistance area will be 78 inches multiplied by 1½ inches, which is 118 square inches, or practically eight-tenths of a square foot; the speed we will assume is 60 miles per hour.

Fig. 3 shows 10½ pounds resistance for one foot at 60 miles per hour, which when multiplied by .8 gives 8.4 pounds resistance. As the strut is 78 inches long and 1½ inches wide, the length to breadth ratio is 78 divided by 1½, which gives a ratio of 50 to 1.

Fig. 4 shows that the resistance for a 50-to-1 ratio is 148 per cent; 8.4 multiplied by 1.48 gives 12.42 pounds as the head resistance of area, but the resistance of the average streamline form of strut is from 56 to 60 per cent of its rectangular area, so we will take 60 per cent of 12.42, which gives as the final resistance of the strut 7.46 pounds.

The curves in Figs. 3 and 4 also show the very great necessity of decrease of head resistance with increase in speed. For all practical purposes the resistance is proportional to the area, or the resistance of five square feet at 50 miles per hour would be five times that shown in Fig. 3 for one square foot, and if the five square feet area was five feet long by one foot wide, the resistance shown in Fig. 3 will have added to it that per cent of increase shown in Fig. 4 for ratio of 1 to 5. The use of Figs. 3 and 4 is to show the importance of reducing the exposed surface to a minimum; for example, at 60 miles per hour, reducing the head resistance by one square foot, will reduce the power necessary for flight at that speed by almost four horsepower, and, owing to the rapid falling off of the thrust of a propeller with its advance through the air, as will be later shown, the elimination of the head resistance becomes more and more important as the speed is increased.

There are a number of aeroplanes that have been on the market for several years, yet their makers do not consider the saving in power obtained by streamline form of the engine and pilot space, to say nothing of exposed struts and spars, of sufficient importance to go to the trouble of so constructing their machines. It is a fact beyond dispute that a strut of reasonable streamline cross-section as shown in Fig. 1 at c, will have only from 50 to 60 per cent of the resistance of a strut of non-streamline form, or to put in a different way, the strength and weight of the struts of a modern biplane could be increased more than 20 per cent without making any increase necessary in the power, when the struts are made of streamline section. If a proper streamline body is used, inclosing the engine, pilot, passengers and controls, it will reduce the head resistance from this source as much as 80 to 85 per cent.

When dealing with head resistance it might be well to call attention to the fact that resistance experienced by a honeycomb radiator as commonly used for water-cooled motors, is very close to 50 per cent of that of a flat board of similar area; that this resistance is considerable is shown by the writer's experience with a radiator placed below the body on a Bleriot-type monoplane, which refused to fly until the radiator was placed within the body, where the lessened head resistance permitted flight, with the motor throttled.

This brings us to the second principle of designing:

All parts of the power plant, control levers and connections, pilot and passenger seats should be located in such proximity and relative position as to give to the disturbed area the nearest approach to the streamline formation shown in Fig. 1 at c. The practical application of this principle, as shown by modern aeroplane construction, will be referred to later.

In order to show the resistance of wires and tubes up to two-inch diameter, at speeds from 20 to 80 miles, the following diagram, Fig. 5, is given:

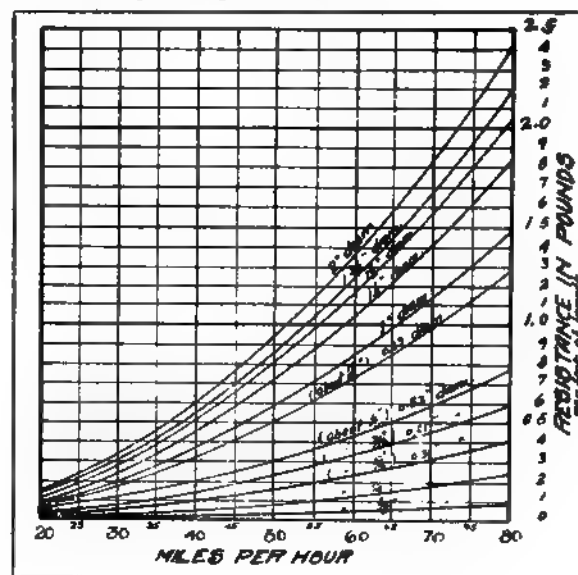


FIG 5

Continued on Page 305

NEW ORLEANS WAS INDIFFERENT TO FOWLER

New Orleans, La., January 4.—Robert G. Fowler, the coast-to-coast aviator, drove his Wright Model B with Cole motor into New Orleans, Sunday, December 31, from near Selxas, La., about 12 miles distant, where he was compelled to alight Christmas eve, while flying from Morgan City, La., to New Orleans. He alighted in a rice field, his machine remaining there more than a week. Inclement weather has prevailed throughout this section for more than two weeks, which together with a broken spark plug, which developed on one start from a handcar, delayed his arrival until New Year's eve, shortly after 3 p. m.

Sunday was not an ideal day for flying, by any means. It was a damp, cloudy day and the wind was more than moderate, but Fowler was chafing under the enforced idleness, and when he left the city for Selxas that morning, he stated he was going to bring the "old kite in, weather or no weather," and he did.

The machine was placed on a small, flat tool car, and a handcar behind furnished the motive power for a start. As the aeroplane left the car the north wind caught it, swinging the machine from above the rails and bringing the left wing directly into line with a cross-arm of a telegraph pole, but just as the watchers thought the jig was up, Fowler banked strenuously and brought the wing under the cross-arm by a narrow margin. Then he began his ascent.

During the flight to the city Fowler continued to climb, and crossed the Mississippi river at a height of about 2,500 feet, and fought his way to City Park racetrack, though a north wind caught him at right angles all the way. A baker's dozen of watchers greeted his arrival in the metropolis of the south—after a trip of 2,100 miles.

The air path the aviator followed brought him over Harahan, La., where John B. Moisant was killed just a year previous to the day, and later in his flight hovered over Metairie Cemetery, where Moisant was buried. From this point Fowler shut off his motor and glided gracefully to the wet racetrack.

While Monday (New Year's day) was admittedly a bad day for outdoor attractions, considerably less than 300 people witnessed Fowler's two flights. If the ponies had been advertised, Jupiter Pluvius could not have kept thousands away. The aviator made one flight at about 500 feet, remaining up five minutes. His engine was not working smoothly, and

miles, it will be hard to find one good, dry or safe landing place. Should he deviate from the L. & N. R. R., he would have to pass over almost inaccessible swamp.

He flew 42 minutes in the rain in west Louisiana, and informed the writer that he is planning a rainshield, as it was

FOWLER GETTING AWAY NICELY

hard to distinguish his way with wet goggles. He telegraphed to the Wrights for information as to a pontoon for a Model B, and was informed that none could be delivered inside of 10 days. As he is determined to get away at the first favorable opportunity, he will not wait for it.

J. R. Grundy has succeeded Sims in the financial end of the journey, the latter returning west. The staff has been reduced from eight to five.

CONVERSE STABILIZER USED THREE HOURS

Sunset Field, San Francisco, January 2.—A stabilizing device which is expected to be of great value to the aviation world was tried out here today by Frank Bryant of the De Vaux aviators, who gave the invention a trial of three hours' almost constant flying.

The device is the invention of M. B. Converse, Oakland, and consists of an electric motor which is run by a large fan placed on the right of the engine between the planes; four ailerons, two on either side, and inside of the main plane, and a mercury tube, which automatically forms connection with the motor when the aeroplane tips.

The mercury tube is placed behind the aviator's seat, and is not quite filled with mercury, so that when the machine tips the mercury in the tube forms a circuit with the wires leading to the motor, which is automatically set in motion to actuate the balancing planes, or ailerons.

Bryant, when approached by Converse with an offer to try out the device, was pretty dubious of results, saying that he had seen plenty of stabilizers before, and did not care to buy any stock. Pressed, however, he agreed to try out the system, providing Converse would connect it in such a way as not to interfere with the manual ailerons. This was done by placing a cutout switch on the steering gear, so that the device could be used at will. After a few turns of the field, Bryant cut in the automatic device and discontinued the use of his manuals, relying entirely on the invention to keep his machine upright on the turns.

Bryant, after his trials, was enthusiastic and spoke in glowing terms of the stabilizer. He said, "I was afraid of the device at first, and only placed it on my biplane after considerable argument with Converse, for I could not possibly see how it would work. The very first flight I made with it proved its utility, and I am sure that it reduces the danger of turning turtle and other balancing troubles to a minimum."

Bryant's last flight consisted of two complete circles of the field, and the balancer did the entire work of maintaining the equilibrium of his biplane. Other tests will be made with the device in about two weeks, when Bryant will again be free to give his time to the matter. In company with Roy Francis, he will leave for Redding tomorrow, where the two will fly on Sunday, giving the first aviation exhibition ever held in that northern city. Francis will use his Gage biplane with Hall-Scott power plant, and Bryant will fly his standard Curtiss. The trip will be under the management of J. C. McTarnahan, who expects to cover several of the smaller towns of the state in a winter carnival of flight.

PREPARING TO START NOTE THE NEARBY POLES

he landed for inspection. The second time he mounted to about 900 feet, circling the park and over adjacent timber several times, remaining in the air seven minutes.

Fowler's feat of crossing this section of the country should not be overlooked as one of the most daring ever undertaken anywhere, for the reason that for a distance of about 350 miles, from near west Louisiana to near Mobile, Ala., there is little choice between telegraph wires, dense timber, cane stubble, rice fields, lagoons, bayous, rivers, lakes, land and sea marsh and gulf waters to land in from New Orleans to Gulfport, Miss., on the next leg of the route, about 70

E. PERCY NOEL, Founder-Editor

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The Editor is pleased to consider MS and photographs for publication, but only material that is likely to prove of interest to the readers of AERO. The Editor cannot undertake to answer technical inquiries except in the columns of AERO.

COLD WEATHER FLYING

When, with the approach of winter, we told in this column of the pleasurable exhilaration of cold weather flying, if properly dressed for it, a few aviators protested that it was not pleasant. We had spoken from experience, although not from experience with zero weather. The experience of others in bitterly cold weather recently, bears out the original argument.

But, undoubtedly, there will always be a number of people who will not care to go aeroplaning in winter, just as there are still a number of automobile owners who put up their cars until spring, as soon as they feel the first breath of winter.

One might well bear in mind, however, that in the early days of automobiling very few people ever used

their cars in zero weather, while today the majority of them find them more comfortable than any other form of conveyance, and much warmer than walking or standing on the street corner.

This has, in a measure, been brought about by changes in body design, and in the provision of wind shields, tops and side curtains.

American aeroplane manufacturers have not yet produced one type of machine with proper provision for the comfort of aviator or passenger against the chilly air of late fall, to say nothing of preparation for winter.

There is more opportunity for the inventor in connection with such arrangements than in the fields of automatic equilibrium, parachute attachments and similar vagaries. A wind shield is needed that will have the minimum of head resistance, will not interfere with the operation of the machine, and will not endanger pilot or passengers. A transparent material is needed, less brittle than glass and stronger than mica, which will not be heavy.

But, without any originality, the American manufacturer can improve the present system of open seats, with their attendant head resistance, and flimsy appearance, simply by copying the type of fusiform body seen on some of the French machines at the Paris show, where there is scarcely an aeroplane exhibited without a fuselage.

Just as the day of building aeroplanes solely for exhibition purposes, or for short flights around an aviation field, when weather conditions are perfect, has passed, so has the year come in which manufacturers must build aeroplanes to appeal to the army and navy, the sportsman, the practical-minded business man.

And next winter we must have aeroplanes that will be comfortable in cold weather.

Contest Program for 1912

The world's aviation programme for 1912 strongly emphasizes the naval and military phase of the game, a side that will continue to remain at the forefront until flying becomes inexpensive and attractive as a sport—a consummation which is clearly in view. The programme contains no more aviation meetings than that of 1911. As at present arranged, the schedule includes the following:

- Gordon Bennett cup race in America.
- Los Angeles Meet, January 20-29.
- Edwin Gould prize of \$15,000.
- Flight of dirigible *Suchard* across the Atlantic in March.
- A Trans-South American flight.
- British military competitions for \$60,000 in August.
- Michelin target competition—1912 and 1913—\$10,000 in each year.
- Michelin International trophy worth \$2,000 and \$4,000 in cash.
- British Empire Michelin trophy and \$2,500.
- British Empire Michelin, No. 2, trophy and \$3,000.
- Mortimer Single Army and Navy prize in England—\$2,500 for each service.
- Ostend-to-London-and-Back contest.
- Prince Henry aviation cup (Germany).
- The Rhine circuit.

PROGRESS RESTS LARGELY WITH FLIERS

By FRANK COFFYN

Let us hope that the coming year will bring a greater confidence in the minds of the general public and the layman as to the genuine usefulness and practicability of man's travel through the air by aeroplane. These two qualities are far more real in their existence than are generally understood, but it is unfortunately mostly the fault of the men who fly, that the world does not look upon the subject in this manner. Upon us aviators evolves in a measure the necessity of educating the public to a healthy view of the matter by safe, common-sense and reliable methods of flying.

Don't let the desire to show off entice a man into dangerous, spectacular flying, or attempt it from cramped and confined places, where he not only risks his own life, but those of the spectators. Give more serious thought and attention as to when and where to fly, a closer inspection and care of the machine to be used, and a greater sense of his responsibility, and painstaking effort in teaching a pupil. These are a few of many things within the realm of aviators to accomplish.

The sphere of the builder for its advancement is just as great almost, in another way. Upon him rests the necessity of building machines more dependable, a greater capacity for weight and a good deal more attention paid to the idea of comfort for the operator and passengers, such as a partial silencing of motor exhausts, easier seats and protection from the rush of air and cold.

Its sphere of usefulness will undoubtedly be enlarged by the rapid development of the hydroaeroplane, and I am convinced that the coming year will see regular routes established between centers of population for quick delivery of important mail and transporting of passengers who must reach certain points in the shortest possible time.

THE DIARY OF FLIGHT

MONDAY, DECEMBER 25.

Chico, Cal.—Thaddeus Kerns, an amateur, made an 18-minute flight at an altitude of 1,500 feet with home-made Curtiss biplane and Elbridge motor.

FRIDAY, DECEMBER 29.

Milledgeville, Ga.—Stanley James, of Washington, D. C., was slightly injured in bad landing from 60 feet, while flying a Titcomb biplane.

SUNDAY, DECEMBER 31.

Santa Rosa, Cal.—Weldon B. Cook gave an exhibition with Curtiss-type biplane and Roberts motor.

MONDAY, JANUARY 1.

Santa Rosa, Cal.—Weldon B. Cook flew, attaining an altitude of 1,000 feet and showering the spectators with thousands of roses gathered for the occasion.

Lynn, Mass.—Harry N. Atwood, after flight from Saugus to Point of Pines, came down in Lynn harbor at start of flight to Portland, Me., his Burgess hydroaeroplane being badly damaged by the heavy waves.

MONDAY, JANUARY 1.

Nassau Boulevard, L. I.—George Beatty flew, carrying passengers.

Hopkinsville, Ky.—Charles Lockwood flew Prowse biplane, with Kirkham six-cylinder motor.

TUESDAY, JANUARY 2.

Sunset Field, San Francisco.—Frank Bryant flew almost constantly for three hours.

WEDNESDAY, JANUARY 3.

Marblehead, Mass.—W. Starling Burgess, Clifford L. Web-

ster, H. J. White and Phillips W. Page made six flights in Burgess hydroaeroplanes.

Nassau Boulevard, L. I.—George Beatty flew, carrying passengers; total distance about 80 miles.

THURSDAY, JANUARY 4.

Mineola, L. I.—H. Kimmerlee flew his Curtiss biplane. Frank Boland flew his tailless biplane.

FRIDAY, JANUARY 5.

Valdosta, Ga.—Jimmie Ward (Curtiss) flew.

SATURDAY, JANUARY 6.

Valdosta, Ga.—Jimmie Ward (Curtiss) flew.

MONDAY, JANUARY 8.

Kinloch, Mo.—Antony Jannus flew new Benoist biplane, with Roberts six.

PALM BEACH NEW BURGESS SCHOOL

Marblehead, Mass., January 5.—The Burgess Company and Curtis has decided upon Palm Beach, Fla., as the location of its southern school, and on January 25, Phillips Ward Page will start for that point, taking with him a Burgess hydroaeroplane, with wheel and skid attachments, so that land as well as water work can be done. About the same time it is expected that Clifford L. Webster will take a similar equipment to Daytona, Fla., for a branch school.

Successful experiments have been conducted with a soft rubber magneto cover, which fitted over the magneto and terminals, and short-circuiting was prevented, despite the dashes of spray, which from time to time doused it.

Wednesday was the only day fit for flying, and six flights were made. W. Starling Burgess made two flights of 15 and 20 minutes' duration, respectively; Webster gave Greely S. Curtis his fifth lesson, and H. J. White, the 19-year-old Baltimore student, made a 24-minute flight over Salem, concluding with an 800-foot volplane. Phillips W. Page made two flights, on the first carrying Albert M. Bartlett, of Boston, and on the second Arthur Constantine, of the *Boston Herald*. After nine minutes, Constantine, in waving his hand to the crowd on the shore, struck the cut-off wire, naturally killing the motor. After Page had successfully negotiated the trip from the 400-foot level, his passenger turned to him, and in a griefed tone asked, "What made you come down so soon, Phil?" The aviator's explanation that his passenger was at fault, resulted in considerable jocularity at the expense of the newspaper man when the fact became known.

AMONG THE AVIATORS

Paterson, the San Francisco propeller maker, is experiencing an extra heavy run of holiday business, and with his shop force is putting in every minute of extra time possible. Among the rush orders received during the past week are the following: Weldon B. Cooke, propeller for Curtiss-type, 7 by 5½; Diddier Masson, for standard Bleriot monoplane, 8 by 5; Gus Siefert, standard Bleriot, with Darracq motor, 7 by 4½; Baldwin & Company, for Curtiss-type biplane, 6 by 4½.

Ivy Baldwin has organized an aeroplane building company, to be known as Baldwin & Company, and is building a Curtiss-type biplane which will be powered by an original Frederickson motor, which is being tested in San Francisco.

Jack Hendy, president of the San Francisco Professional Chauffeurs' Association, is the latest addition to the ranks of the amateurs, having purchased the Farman biplane formerly used by Fred Wiseman, of Santa Rosa. The machine is equipped with a Hall-Scott power plant, and is one of the first to be thus equipped in the state. Hendy will make arrangements within a short time to take the field with his biplane, and will make practice flights until such time as he becomes proficient in its handling.

Rider brothers, Newark, O., have just taken delivery of an American biplane, and expect to be ready within a few days to start south on an exhibition tour.



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BULLETIN

Club Quarters Ready January 25

All members of the Aero Club of St. Louis are invited to attend the opening of the club room on the sixth floor of the Columbia building, southeast corner Eighth and Locust streets, Thursday evening, January 25, at 8 p. m.

There will be an informal semi-technical discussion of "Aeronautic Instruments and Their Uses," illustrated by a number of the instruments, photographs and drawings. A. B. Lambert former president, now chairman of the aviation grounds committee, and E. R. Armstrong, of the technical committee, will give brief talks. These will be followed by a general discussion and a smoker.

Committees

The following club committees have been named to serve during the current year:

CONTEST.

James W. Bemis, chairman; A. B. Lambert, E. Percy Noel.

AVIATION GROUNDS.

A. B. Lambert, chairman; E. R. Cuendet, one other member to be named.

SPHERICAL BALLOONS.

Paul McCullough, chairman; W. F. Assmann, James Bemis.

AERODYNAMICS.

Tom Benoist, chairman; E. R. Armstrong, J. C. Hulbert.

Aero Club of America Banquet

Members of the club who desire to attend the annual dinner of the Aero Club of America, which will be held at Sherry's, New York, January 27, are requested to advise the secretary of the Aero Club of St. Louis, who will make reservation.

President Taft will be the guest of honor at this dinner, and acceptances have been received from many prominent and distinguished men, so that the affair promises to be a great success.

Only a limited number of reservations can now be made, so reservation for any members desiring to attend must be made immediately. The subscription required is \$10 a cover.

The International Balloon Race

Although announcement of the date may not be made until April 1, the international balloon race for the Gordon Bennett aeronautic trophy, will be started at Stuttgart, under the control of the German club. It is believed that Great Britain, France, Switzerland, Italy, Germany and the United States will be represented in the race.

The Royal Aero Club (Great Britain) has decided to enter the race, and has called for three volunteers among its pilots. Intending candidates have been asked to notify the club on or before January 15 of their willingness to compete.

The Aero Club of America has not yet issued a call to the pilots of affiliated clubs, in regard to candidates for the American team. It is possible that the national championship

race will serve as an elimination event to select the team, but this will not be decided until the date of the international race is announced.

It has not yet been decided where the national championship race will be started, but it is probable that Kansas City will again be chosen unless some other club suitably situated geographically and with proper gas facilities comes forward with an offer.

Notes of Club and Field

Horace Kearny left St. Louis Friday for Los Angeles, where he will compete in the big meet.

Wilcox and Blakely are continuing work on their Wright-type biplane, at the field.

Edward Korn, of Jackson Center, O., returned to Kinloch to continue practice with the Langford biplane with Roberts motor.

Great interest is shown in the future downtown quarters of the Aero Club of St. Louis, and there is a live demand for monthly meetings for technical and semi-technical discussions.

DREW JOINS CHICAGO COMPANY

Chicago, Ill., January 6.—Andrew Drew, licensed pilot No. 50, has been engaged by the Chicago Aeroplane Manufacturing Company and Aviation School, and will arrive here the first of next week to take up his duties as assistant chief instructor, "Bud" Mars being chief instructor. Until recently Drew has been flying a Wright biplane. He took part successfully in the Chicago, Canton and St. Louis meets, frequently winning the accuracy in landing contests against all competitors.

This is only the beginning of the carrying out of the plan of the Chicago company to engage pilots of the highest standing for instructors. It is stated five or six more will be taken on before spring.

The company school is now known as the American School of Aviation, and the aeroplanes produced are called American biplanes, although virtually Curtiss-types. A new hangar has just been completed at the school's aviation field, West Pullman, Ill. Another will be built soon. These hangars are of up-to-date construction, heated, and capable of housing two machines each.

The school is offering the use of two different makes of motors to pupils who desire to build experimental machines.

NEWEST BENOIST MAKES GOOD AT KINLOCH

Kinloch, Mo., January 8.—The first real zero weather flying in St. Louis was seen by a few builders and students at the Aero Club of St. Louis flying field today when Antony Jannus tried out an entirely new Benoist biplane, with Roberts six-cylinder motor and Paragon propeller. The official Weather Bureau temperature and wind velocity were respectively 10 degrees and 20 miles an hour. It was also snowing.

Jannus did not intend to make more than a jump. He wished simply to satisfy himself and Tom Benoist, that the new creation was a real flier. It came up to their expectations, and more, getting off the ground in about 15 feet, against the wind. It took 30 feet of altitude like a shot.

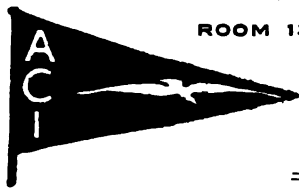
To save a smash-up, Jannus had to keep on flying. He made two wide circles, outskirting the field on the west and east, before he landed perfectly by the hangars.

The new Benoist is a headless. The lateral stabilizers in the form of alleron attached to the outer extremity of the planes are non-rigid, the whole surface being flexed. The tail is of the same construction and is warped in a similar manner. The main planes do not differ from the former Benoist machines. The running gear is novel. Two semi-elliptical steel springs, such as are used on automobiles, are employed in connection with twin wheels.

SLOANE TO ENTER BERLIN SHOW

New York, January 6.—John E. Sloane, of Brooklyn, is building a monoplane of the Bleriot type for military purposes, which he will show at the aeronautical exposition in Berlin in April. Armored protection will be one of the features of the Sloane machine.

THE AERO CLUB OF ILLINOIS



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BULLETIN

NOTES OF THE CLUB AND FIELD

The McCormick-Romme umbrellaplane has been doing considerable grass cutting and jumping this week. Thursday Lieut. Ruel had it out, but a dished wheel, as it made a quick turn at high speed, stopped its work for the day.

J. D. Blayney's low center of gravity monoplane is a fast worker, and it has acted in the air as though the short jumps of the present could be lengthened into circuits of the field after a bit more practice.

What has become of all the fliers who were to show 'em all how? Haven't the secretary and the consulting engineer each a machine somewhere? There are plenty of warm socks about, if that is the trouble.

Walter Runcie, the club's biograph expert, took some motion pictures of the McCormick reverse-curve monoplane and Blayney's machine Thursday. Walter will have them for the edification of members of the club later.

Lupd & Dwight's tandem quadruplane is about ready to do a lot of running. It uses a 12-foot propeller, driven slow through gearing, and with a controllable pitch. This is the largest propeller on the field, the record previously being held by Sexton's 11'4" Paragon.

The following were the members of the nominating committee present Saturday when the next year's slate was drawn up: Messrs. Plew, McGann, Sparr, Ackley, Rumler and Wells.

Col. Frank X. Mudd, of the membership squad, says that while a hundred new members have been added to the membership this early in the campaign, no one man has returned enough to win either the Bartley \$50 prize or the Bartholomay \$25 prize. There still is opportunity for some hustling member-getter.

"Model Aeronautics," of Muncie, Ind., Irwin Martin, editor, is looking for news regarding model aeroplanes. His interest does not go beyond the model, says Martin, but he wants to hear from all interested in that branch of the art.

Have you used the new telephone number, Harrison 3289, yet? Try it, just to see if there really is someone at the office end of the wire.

OVINGTON CHALLENGES TILLINGHAST

Newton Highlands, Mass., December 30.—Earle L. Ovington, the aviator, whose flights in his Bleriot monoplane were features of many of the past season's aviation meets, today made some very pertinent remarks regarding the claims of soaring flight, and of the invention of an engine recently made by Wallace E. Tillinghast, of Worcester.

"Mr. Tillinghast tells stories of soaring for a long time without power," said Ovington. "The Wrights showed the public some gliding. Why doesn't Tillinghast show us? They

are doers. Tillinghast claims that his machine can be propelled by a sail placed between the engine and pilot. According to the drawings, there is no room for even a small sail. Tillinghast also claims to have done away with warping. Yet he has planned to place small ailerons above the main planes, a feature that Curtiss discarded long ago because of its impracticability. I will not comment on his claims that he can move all over his machine while in mid-air.

"His proposed machine possesses characteristics of old machines, non-flyers. His sharp dihedral angle in the planes is theoretically good in still air, but has been proven absolutely impractical by the ablest engineers and aviators. Taking the machine as a whole, it has not a single novel feature, and every feature claimed as novel has been tried and abandoned as impractical.

"A small matter, but one which shows the exaggerated ideas, is the engine, which is supposed to weigh 200 pounds, and to develop 125 horsepower. Comparing the cylinders with the size of the magneto in the scale drawings, I should say that if it developed 50 horsepower it would be an especially efficient engine.

"I do not believe that the excellent progress being made by real workers should be detracted from by the claims of one who has done nothing publicly but talk. Curtiss and the Wright brothers have done more to advance aviation than the inventors of any other country, and their excellent work should not be detracted from by the reported claims of a notoriety seeker. It is all very well to claim that one seeks secrecy and does not care for notoriety, but from the methods used to attain it, it is evident that Mr. Tillinghast is a deep student of the subject.

"If Tillinghast has anything better than exists, or anything that will make the aeroplane a safer vehicle, it is certainly his duty to aviation to bring it forward, and until he is ready to do so it seems to me it would be better for him to keep quiet."

ATWOOD ACCIDENT WAS ONLY A WETTING

Boston, January 6.—Harry N. Atwood has figured prominently in the news of the past week. On Monday his hydro-aeroplane was wrecked, and he suffered a severe ducking in Lynn harbor, while starting from Point of Pines on a flight to Portland, Me. On Wednesday he acknowledged that he was contemplating a trans-Atlantic flight from Newfoundland to Ireland. On Thursday it leaked out that he was devising an inflatable rubber pontoon with a stout backing, and yesterday a dispatch was received in Boston from Akron, Ohio, stating that he would retire from flying and engage in a manufacturing business in that city, where a company with \$200,000 capital stock is being organized to build a machine upon which Atwood will attempt to obtain patents.

After making a successful flight from Atwood Park, Saugus, the aerodrome of the Clayton & Craig Aviation School, to Point of Pines, Atwood and his mechanics substituted the hydroplanes for the skid-and-wheels alighting gear of the Burgess biplane. Starting again, he had made a flight of about two miles, when some water which had struck the magneto at the start seeped down into it and caused a short circuit. As the machine struck the water, the high wind careened it backwards, and a big wave wrenched away the fuselage from the main cellule and smashed the trailing edge of the lower supporting plane.

As the machine tipped over, Atwood sprang from his seat and climbed over the planes like a squirrel, drenched to the skin. He was taken ashore in a fishing boat, and the aeroplane was later rescued. It was taken to the Burgess Company and Curtis plant at Marblehead Tuesday afternoon, where it was announced yesterday morning it had been thoroughly repaired.

Thousands along the coast between Boston and Portland who had been watching for hours for his coming were deeply disappointed at the news of the accident. Atwood later announced that he would again attempt the flight, for which the Portland Board of Trade has offered a large prize, as soon as the hydroaeroplane was repaired.

Stewart B. Wheel, of Philadelphia, is building a monoplane in which he will mount a Grey Eagle power plant.

Model Aeroplanes

Constitutions and By-Laws Ready

Preparations for organizing clubs throughout the country are now made, while several have been temporarily organized. Temporary or permanent organizations, which have not yet received copies of the suggested constitution and by-laws, should notify the Aviation Association of America, 318 North Eighth street, St. Louis.

Anyone desiring to organize a club which will be affiliated with the national body, who has not yet sent in his name, will obtain helpful information by doing so.

The following are desirous of organizing clubs. Where two names are mentioned in the same city, the first name given is believed to be chairman of the organizing committee:

COLORADO.

Denver—Henry L. Nicholls, 1225 East Twelfth avenue.

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New Orleans—Ashton Kern, 3104 Magazine street.*

MARYLAND.

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South Bend—Joseph A. Avery, Experimental Department, 619 Sherman avenue.

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Lynn—Edwin Cotton, 58 Broad street.

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Houghton—Frank E. Beltown.

Detroit—E. C. G. Klopocinski, 472 Grondy avenue.

Battle Creek—Edward Pillsworth, School of Applied Art.

MISSOURI.

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St. Louis—F. G. Vohs, 4744 Natural Bridge road.

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Schenectady—W. P. Dean, 9 South Church street.

Rochester—Louis H. Friedman, 12 Henry street.

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Cincinnati—A. E. Bolender, 2321 May street.

Lorain—E. Graupner, 1010 Ninth street.

Painesville—M. W. Mighton, 128 Erie street.

OREGON.

North Powder—Alpha M. Koester, Box 183.

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Pittsburg—Fred Fulgora, Box 356, North Diamond Station.*

RHODE ISLAND.

Manton—Joseph Pozeor, 655 Killingley street.

SOUTH CAROLINA.

Columbia—Terry Mitchell, No. 5, University of South Carolina.

TEXAS.

Bells—E. R. Childress.

Austin—Hoard Miller, 1505 Trinity street.

Memphis—Marcus Rawlins, Box 331.

WISCONSIN.

Racine—Eugene Stanfield, 1001 Fourteenth street.

La Crosse—Clarence Alleman, 302 West avenue, N.

Abrams—Bert Sargent, Box 118.

Aero Bibliography

The Triumph of Aerial Navigation (Le Triomphe de la Navigation aerienne), by Count Henry de la Vaulx; quarto, 400 pages, 300 illustrations. Price: Stitched, 12 francs; bound, 16 francs. J. Tallandier, editor, 75 rue Dareau, Paris.

This new book of the famous aeronaut fills an important gap in aeronautical bibliography. De la Vaulx justly considers that the practical development of aerial navigation confines itself to the last 10 years. His chief aim, therefore, has been to follow the efforts accomplished during those years, and record its progress. His pen successively describes the novel scientific applications of the spherical balloon, the ancestor of aerial machines, of the dirigible, primitively a simple toy, but which, thanks to the united efforts of mechanical inventors, quickly blossomed into a useful war machine; then the aeroplane claims his attention, the aeroplane of quite recent realization, and which remains the most admirable conception of this early twentieth century.

The author placing himself as an independent observer, notes and disposes of facts in dealing upon them and pointing out their consequences. The technical considerations are reduced to the strict necessity of allowing a clear and thorough reduced to the strict necessity of allowing a clear and thorough machines described.

Consequently, Count de la Vaulx's highly interesting work is accessible to all; easy reading, it gives the peruser an exact idea how man has, during the last 10 years, realized the ancient dream, and conquered the atmosphere.

FIVE ACCURATE LANDERS QUALIFY

San Diego, Cal., January 2.—All five of the students at the North Island Curtiss school who have recently qualified for their pilot certificates, landed on the designated spot in the accuracy test.

William H. Hoff, of San Francisco, flying in 16-20-mile wind, made the first five figures eight in 10 minutes, at an altitude of 250 feet; the second set in 12 minutes, altitude 550 feet.

Lieut. J. W. McClaskey made the first figures in 11 minutes, the altitude 250 feet; the second in 7½ minutes, altitude 450 feet.

S. C. Lewis, of Boston, Mass., accomplished the first set of figures eight in 7 minutes, altitude 325 feet; the second in 8½ minutes, altitude 425 feet.

J. B. McCalley, Harrisburg, Pa., flew the first set in 8½ minutes, altitude 275 feet; the second, 6½ minutes, altitude 500 feet.

Charles W. Shoemaker, Olean, N. Y., flew the first set in 11 minutes, at 200-foot altitude; the second in 8 minutes, at 200-foot altitude.



How To Obtain An Aviation Pilot License

As there probably will be a large number of aviators in the coming spring and summer who will want to take out an aviation pilot license, AERO thinks it best to give an outline of the procedure that should be followed, as by following this the aviator will avoid an unnecessary and sometimes annoying delay.

The aviator should apply in writing to the secretary of the Aero Club of America, 297 Madison avenue, New York, and in his letter give his date and place of birth, and enclose in the letter two unmounted photographs of himself, $2\frac{1}{4}$ by $2\frac{1}{4}$ inches, together with a fee of \$5. These details are essential in order that the club may know whether the applicant is qualified by age and citizenship to take the test. One copy of the photograph is attached to the pilot license and the other copy is filed with the application for identification.

On the receipt of the letter, the applicant will be notified by the club secretary of the name of the representative appointed to supervise the tests required by the International Aeronautic Federation.

It is strongly advised that applications for pilot license be submitted well in advance of the time that the aviator desires to pass the prescribed tests, and the time and place of the tests can be arranged between the aviator and the representative of the Aero Club at their mutual convenience. After the tests have been satisfactorily passed, the representative submits a report, giving the details of the test to the contest committee, which, if the tests are satisfactory, recommends to the board of governors that an aviation pilot license be issued. On the approval of the recommendation of the committee the license is sent the successful applicant.

The following is the test prescribed by the International Aeronautic Federation:

(A) Two distance tests, each consisting in covering without touching the ground, a closed circuit not less than five kilometers in length (length measured as indicated below):

(B) An altitude test consisting in rising to a minimum height of 50 meters above the starting point.

(C) The (B) test may be made at the same time as one of the (A) tests.

The course over which the aviator shall accomplish the aforesaid two circuits must be indicated by two posts situated not more than 500 meters from each other.

After each turn made around a post, the aviator will change his direction so as to leave the other post on his other side. The circuit will thus consist of an uninterrupted series of figure eights, each circle of the figures alternately encircling one of the posts. The distance credited over the course between two turns shall be the distance separating the two posts.

For each of these three tests the landing shall be made:

(1) By stopping the motor not later than the time when the machine touches the ground.

(2) At a distance of less than 50 meters from a point designated by the applicant before the test.

Landings must be made properly, and the official observer shall indicate in his report the way in which they were made, the issue of the license being always discretionary.

Official observers must be chosen from a list drawn up by the governing organization of each country.

Only the organization governing aviation in each country represented in the *Federation Aeronautique Internationale* shall have the right to issue the license of aviator to applicants of at least 18 years of age and under its jurisdiction, to-wit:

I. Citizens.

II. Foreigners of a country not represented in the F. A. I.

III. Foreigners of a country represented in the F. A. I. (but in this case a license may be granted only with the permission of their own national organization).



HOW TO DESIGN AN AEROPLANE

Continued from page 298

This diagram shows, for instance, that at 60 miles per hour, the resistance of a tube two inches in diameter and four feet long is 5.44 pounds, so that the two tubes of the Bleriot-type landing chassis encounter a resistance of about 12 pounds at that speed, or about four horsepower is absorbed by this particular feature of the design.

One would naturally think a vibrating wire would set up considerable more resistance than a wire not vibrating, and in the past several writers have enlarged on the necessity for tautness in all exposed wiring, with the idea of lessening their resistance. Experiments carried out recently show that there is practically no difference in the resistance; in any event, it cannot be greater than three per cent more, for the vibrating wire, if the vibration is confined to reasonable limits.

By the use of the preceding diagrams, any constructor can calculate the probable head resistance of his proposed design, by estimating the speed he wishes to make, and multiplying the resistance of one square foot at that speed, as shown in Fig. 3, by the number of exposed normal surface of the proposed design, and allowing for the lessened resistance, depending on the shape, or increasing the resistance, as shown for the length to breadth ratio of the exposed areas.

In designing, special care should be taken that structural parts, having a greater or less width in the direction of advancement, are in the line of normal flight, when the machine is at its flying angle. The writer is familiar with a well-known foreign aeroplane that, owing to several members of the landing gear being at a negative angle with the line of flight, expends over two horsepower to counteract the downward reaction caused by the negative angle of the parts.

We recommend the study and use of the diagrams as a guide to show the importance of reducing the exposed surfaces to the minimum, and the necessity of giving the absolutely necessary surface a streamline shape. One cannot give too much time and attention to this feature of a design; the speed of any aeroplane is absolutely limited by the head resistance. Keeping in mind the foregoing principles of design in regard to head resistance, it must be accepted as a fact that any proposed aeroplane will be successful in just that proportion in which these principles are followed. As an illustration of these principles, note the streamline body of the Nieuport monoplane, in which 80 per cent of the resistance caused by the necessary power plant, pilot and controls, is eliminated, compared with the head resistance met by a biplane of the Farman type, where no provision is made to enclose these essentials in a streamline body. That the great difference in the resistance of these two machines is head resistance, is shown by the fact, which will be referred to later, that there is no very great difference in the efficiency of the wing sections employed in the respective machines.

As a check on the resistance as found by the use of Figs. 3 and 4, which are based mainly on the recent experiments of Eiffel, and as a further illustration of the use of these diagrams, we give below the calculation of the resistance of a steel tube two inches in diameter by five feet in length. The resistance being determined by Figs. 3 and 4, and also independently by Fig. 5 as a check on the use of Figs. 3 and 4. Fig. 5 is based on experiments carried out by the laboratory committee of the Aeronautical Society of Great Britain. The speed of advancement of the tube is assumed to be 60 miles per hour in both cases.

Resistance by Figs. 3 and 4: (Five feet in length equals 60 inches.) Two inches multiplied by 60 inches equals 120 inches; 120 square inches equals .835 square foot; two inches wide by 60 inches long equals a ratio of 30 to 1. From Fig. 3 we find the resistance of one square foot at 60 miles per hour to be 10.08 pounds; 10.08 multiplied by .835 square feet equals 8.28 pounds.

To be Continued next week.

The directors of the new Curtiss Motor Company, of New York and Hammondsport, are Glenn H. Curtiss, Monroe Wheeler, Jerome Fancuilli, G. Ray Hall and Philip P. Sawyer. The latter represents the purchaser of preferred stock.

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1,011,386, December 12, 1911.—William Stevens, Los Angeles, Cal. A flying machine comprising a frame, a movable supporting plane disposed adjacent to one end of said frame, a fixed plane disposed adjacent to the other end of said frame and having less supporting surface than the movable supporting plane, and an operator's seat disposed above said plane and over the portion thereof exerting the maximum of supporting efficiency.

1,011,519, December 12, 1911.—Herbert L. Stillman, Westerly, R. I. A flying machine comprising an open main frame, spaced pivoted wings mounted on transverse axes on said main frame, a motor, connections between said motor and wings whereby said wings are oscillated from their uppermost positions with a downward and backward stroke, each of said wings comprising a pair of pivoted flaps which automatically open and close on their downward and upward strokes, respectively.

1,011,604, December 12, 1911.—Herbert J. French, Seattle, Wash. A flying machine comprising a supporting frame, a main plane arranged transversely of the rear portion thereof, vertical fins arranged transversely of the end portions of said plane, righting extensions hinged to said fins, a propeller projecting beyond the rear of said plane, and a combined supporting plane and rudder carried by the forward portion of said frame.

1,011,620, December 12, 1911.—Ernest W. F. Herrmann, San Antonio, Tex. A flying machine embodying a supporting plane having portions thereof movable relative to other portions, said movable portions hinging along diagonal lines extending from the middle of the front of the plane to the rear of the sides, and of means for manipulating said movable portions.

1,011,683, December 12, 1911.—Jean Francis Webb, New York, N. Y. A flying machine that includes in itself sustaining means, a propelling mechanism and devices for controlling its movement, combined with a plurality of serially

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arranged normally inactive parachutes nestable one within the other for sustaining said flying machine when said flying machine falls.

1,011,767, December 12, 1911.—Elecie P. Farum, Santa Cruz, Cal. A flying machine composed of central and outer planes of uniform or wedge-shape angularly disposed in transverse section to form a horizontal fluted plane declining transversely and longitudinally from front to rear, the central planes being contiguous having their rear ends cut away to form inwardly sloping edges and the outer planes having oppositely cut divergent edges to expose the corresponding portions of the central planes to lateral air currents.

1,012,006, December 19, 1911.—Harry W. Pike and Renus E. Johnson, Osceola, Nebr. A flying machine embodying stabilizers, an arcuate guide, a pendulum, a member carried thereby and traversing said guide, connections between said pendulum and the stabilizers, and a pivotal support for the pendulum, adapted to permit the same to have vertical shifting motion.

1,012,201, December 19, 1911.—William Happer, Jr., New Bloomfield, Pa. A combined explosive engine and air propeller, comprising a stationary crankshaft, a crankcase, rotative on the crankshaft, cylinders attached to the crankcase, and propeller blades rigidly attached to the crankcase along diagonal lines lying between the cylinders and extending from one side of the crankcase to the other, substantially as described.

1,012,308, December 19, 1911.—Chas. G. Wieland, New York, N. Y. A propeller comprising a hub, and a plurality of blades projecting therefrom provided with conduits running from their leading edges toward their following edges, substantially parallel with the faces of said blades and gradually increasing in cross section toward their following edges.

1,012,416, December 19, 1911.—Aloysius Niemczura, Amsterdam, N. Y. A motor boat comprising an aerial propeller, a vertically disposed propeller shaft, operating means for the propeller shaft, a pair of posts arranged at the stern of the boat, a bearing for the upper end of said shaft, supports for said bearing connected to said posts, a pair of vertically disposed tubular members at the bow of the boat, a pair of uprights telescoping in said members, means carried by said members and engaging in said uprights for vertically adjusting them, means for maintaining the uprights in the adjusted position, a longitudinally extending right-angular plane arranged over the uprights and posts, means for pivotally connecting the rear of said plane to the top of said posts, and means for pivotally connecting the forward end of said plane to the top of said uprights, said plane of a width greater

than the width of the boat.

1,012,441, December 19, 1911.—William Reid, Newark, N. J. A propeller comprising a hub and forward and rear sets of blades thereon, the forward set of blades extending radially outward in opposite directions with their axes perpendicular to the hub axis, the rear set of blades being located in alignment with and to the rear of the forward set of blades with their longitudinal axes in a plane passing through the axis of the hub and said blades, said rear blades being inclined rearward relative to the forward blades and spaced from said forward blades in such a manner that the distance between the blades on a line parallel with the axis of the shaft is, at any point between the hub and the widest part of the blades, substantially equal to twice the width of either blade at that point.

1,012,529, December 19, 1911.—Robert M. Dungan, Santa Ana, Cal. An air airship embodying a single oval-shaped supporting plane, having four circular openings therein substantially equidistant from the center, the rear edges of the forward openings projecting upwardly and forwardly to form hoods.

1,012,532, December 19, 1911.—Mauritz Engstrom, Clam Falls, Wis. An airship comprising a body portion, a car suspended from the body portion, means within the car supplying the power to the body portion, and propellers carried by the body portion and operated by the power in the body portion.

1,012,540, December 19, 1911.—Kimber A. George, New Haven, Conn. A flying machine comprising a frame, of two planes mounted in the frame one above the other, the upper plane formed with an outwardly curved forward edge and rearwardly and inwardly directed side edges, said plane being inclined downwardly from its front to its rear, and gliding wings on the upper plane curved downwardly toward their back edges.

1,012,559, December 19, 1911.—Morris Kalaba, New Rochelle, N. Y. An aeroplane, comprising a framework, spaced planes one above the other, guides between the said planes, and inflatable and deflatable bags mounted on the said guides and formed bellows-like for extensible and contractible movement under the effect of inflation and deflation.

1,012,767, December 26, 1911.—James R. Vize, Evansville, Ind. A flying apparatus embodying a pair of arm-operated propelling devices, foot-propelling devices comprising elliptical planes, foot plates arranged transversely of said planes at the inner ends thereof, means to secure said plates to the legs of an aviator, and means to sustain the weight of an aviator in the air.

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Gentlemen:

Pittsburg, Cal., Jan. 4, 1912.

We received our 4-X Roberts motor 7 A. M., on Nov. 25th and had it installed, made a flight of 29 minutes, flying over Stockton at 1 P. M., of the same day. At 3 P. M., of same day our aviator, Mr. Weldon B. Cooke, made another flight of 48 minutes attaining an altitude of 2800 ft. and on the following day he again made two flights of about 25 minutes each. On November 27th, he flew from the ball park to the race track, a distance of two miles, raced a motor cycle twice around the track, and then continued on to the town of Lockford, a distance of 21 miles, where he alighted and had lunch with his grandmother. He filled his gasoline tank and flew back to the Southern Pacific Station in Stockton in 24 minutes, the trip over taking 43 minutes.

On Dec. 8-10-17-24, he made one flight each day of 25 to 55 minutes attaining an altitude of 2500 to 3500 feet in some very squally weather.

On Dec. 19th the day Cooke circled around Mt. Tamalpais, he left the Oakland Motordrome, near Elmhurst, flew over Oakland, Berkeley, Richmond, across the bay, over San Quentin prison, around the mountain, and landed in Mill Valley at 5:30 P. M., after being in the air one hour and 20 minutes and covering a distance of about sixty miles. His altitude from the time he was over Berkeley until he had circled the mountain was 4000 to 4500 ft. Think this is a record for the Roberts 4-X motor. After waiting two days for weather conditions, he flew back over the same course landing in the Oakland Motordrome.

Also made four successful flights in Santo Rosa, Cal., Dec. 31st and Jan. 1st getting off the ground from a very rough field in about 150 ft., and flew in exceptional strong wind.

The above altitudes were all taken with a barograph and are facts.

We are well satisfied, as we stated in our letter of the 3rd inst. never having any trouble to start or to get as high as we intended. Have not lost a date, always doing what we started out to do, also carrying passengers on different occasions.

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The Los Angeles Meet



January 27, 1912

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Vol. III No. 17

**COLD WEATHER FLYING—Antony Jannus With One of the Sixteen Passengers He
Carried at Kinloch, January 21**

TALK No. 1

10,000 PEOPLE

In the past two years have asked me why I have not become interested in the commercial end of aviation. My answer has been, "When the aeroplane industry can be operated on the same basis that the present automobile business is conducted, then you will find me there with the best equipment that money and brains can assemble."

I have spent for my associates in the past three years \$125,000 in cash with absolutely no returns, just to make New York City the aviation center of America, and you know how well I have succeeded.

The public has been educated; they saw the greatest flying in the world by the cleverest exponents of the art at the Nassau Boulevard Aerodrome last summer. So interested did they become that the wealthy bid fabulous prices for machines and paid exorbitant fees for tuition, but the man in moderate circumstances had to be satisfied with looking on.

The aeroplane industry, up until the present time, has been practically controlled by four manufacturers, three of them builders of biplanes exclusively and one manufacturing monoplanes; their prices ranged from \$4,500 to \$6,500 for machines which cost them about one-quarter of this amount to produce. They got the cream, but the public got wise, and today two of these plants are closed.

I believed that with sufficient capital, the employment of standard equipment and well paid, skilled labor that a plant could be established here that could turn out the finest aeroplanes in the world at a price which would discourage competition and insure a handsome return on the capital invested. I convinced others of this fact, hard-headed New York business men who "Look twice before they leap," with the result that I have established at Hollis, Long Island, the most up-to-date aeroplane factory that money could provide. I have secured the services of acknowledged experts to conduct the various departments, installed the most modern machinery obtainable, and am now ready to show you what \$600 to \$800 will do toward owning a duplicate of the finest Bleriot monoplane that ever flew.

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Edited by E. PERCY NOEL

LOW FLYING IN SPEED EVENT PROVES FATAL

By a Staff Correspondent.

Los Angeles, Cal., January 22 (Telegram).—When just about to start in the second heat of the five-mile free-for-all speed event at 4:30 p. m. this afternoon, at Dominguez field, on the third day of the meet organized by Dick Ferris, in which 24 licensed aviators are entered, Rutherford Page was killed, and the other events for the day were called off. He flew a 1912 Curtiss biplane.

Page's death was the indirect result of the close competition that has developed in the speed events. Many of the contesting aviators agree that if caught in the same circumstances that Page encountered they would probably have met a similar fate.

The basis for the trouble lies in the fact that the speed events, frequently between machines of the same make and horsepower, have caused the aviators to fly dangerously near the ground, to obtain the increase of about two per cent speed that results from low flying.

Page started off in front of the grandstand, heading into a 15-mile wind. Reaching the end of the hangars he turned with the wind—a turn that requires experience and skill, even at a good altitude. Page's altitude was not more than 30 feet. While on the turn the engine almost stopped for a few

seconds, then gave a few explosions and stopped dead, leaving Page banked up, going with the wind. He was so close to the ground, which was freshly ploughed and rough, that it was impossible for him to land safely.

Although Page was evidently reckless, he was not inexpert. He proved this by qualifying for his pilot's certificate on Saturday, and defeating Beachey in the open speed event.

Page was probably killed instantly by the pressure of the radiator on his breast, as his neck and back were broken. The wreckage was very bad.

G. H. Curtiss, who took a deep interest in Page and was apparently very fond of him, had urged him earlier in the day to be careful. Page had laughed off the advice. It was common talk around the stands that he would follow Lincoln Beachey or break his neck.

Except for this sad accident the meet has been a success from the promoter's and the aviator's standpoint. Saturday, opening day, was a wonder. The weather was perfect, and 15,000 people went through the gates. The number of entries was swelled to 44 by the amateurs, or unlicensed men. Their participation early each afternoon has added interest to the meet, and a fairly good number have been off the ground.

SATURDAY, JANUARY 20.

W. B. Atwater and Rutherford Page, Curtiss San Diego school graduates, qualified for their pilot certificates, G. H. Curtiss and Lieut. T. G. Ellyson, U. S. N., being the judges. Provisional certificates were granted for them immediately by telegraph.

The speed tests for the five-mile handicap events were held with the following results: C. F. Willard (1912 Curtiss), 8:17; P. O. Parmelee (Wright), 8:50; J. C. Turpin (Wright), 10:46; Frank M. Stiles (Macomber), 10:52; Glen Martin (Martin) 9:57; H. F. Kearny (Benolst), 7:47 1-5; Hillery Beachey (Helmman-Beachey), 9:27½; W. B. Atwater (Curtiss), 8:20; Howard Gill (Burgess), 12:11.

Blanche Scott flew a 12-minute exhibition, making right-hand turns in fine style in the Martin-Curtiss-type. She was the hit of the day with the big crowd.

Parmelee went out for altitude. The barograph ceased to register at 5,000 feet, and he came down.

In the amateur duration event Harvey Crawford was up 5:15.

In the regular duration the totals for the day were: F. I. Fish (Wright), 2 hours 27 minutes 10 seconds; Howard Gill (Burgess), 2:23:30; J. C. Turpin (Wright), 2:19; W. B. Cooke (Cooke), 1:59:43; Glen Martin (Martin), 1:02:57; Atwater (Curtiss), 44:12; W. H. Hoff (Curtiss), 15 minutes; C. F. Willard, 13 minutes; Miss Scott, 12 minutes; Parmelee, 10 minutes.

In the five-mile free-for-all Lincoln Beachey (Curtiss) won, with 7:15; Martin second, with 8:15; Parmelee, 8:30.

The figure-eight was won by Lincoln Beachey (Curtiss) in 1:37; Parmelee (Wright), 3:02.

The five-mile handicap was mistimed, and Parmelee, L. Beachey and Martin split the purse.

SUNDAY, JANUARY 21.

The weather was fine, although the wind was a little choppy. Thirty-five thousand people gathered at the field. One accident marred the day's flying. Albert Elton made a bad landing from 200 feet, putting his Wright completely out of commission. Elton was only slightly injured, but he retired from the meet. Glen Martin gave up the handicap race to assist him.

The five-mile handicap was won by Lincoln Beachey (Curtiss); time 7:00 2-5; Parmelee (Wright), 7:07 1-5; Atwater (Curtiss), 8:28 1-5.

The international race was won by L. Beachey; time, 2:07; Horace Kearny (Benolst), 2:13 3-5; Hoff (Curtiss), 3:30.

Lincoln Beachey and Parmelee concluded the day's flying with an exhibition, each vying with the other in making sharp turns and figure-eights.

In amateur duration Harvey Crawford made 3:55 4-5.

In regular duration Cooke led with 2:30:00; Atwater, 1:48:00; Fish, 51:02; H. Beachey, 45 minutes; H. Kearny, 42:30; Willard, 31 minutes; Parmelee, 30 minutes; Turpin, 27:15; Hoff, 21:30; Lincoln Beachey, 18 minutes; Martin, 13 minutes; Miss Scott, 11 minutes; Stiles, 2 minutes.

MONDAY, JANUARY 22.

Willard delivered mail to Compton and return, five miles; time, 13:25 for the round trip.

The five-mile handicap was the event in which Page defeated the unbeaten Lincoln Beachey, winning the race with 6:37 2-5; Hoff, 6:53; L. Beachey, 6:55; Hillery Beachey, 7:01 3-5; Martin, 7:05 3-5; H. Kearny, 7:13 2-5; Parmelee was disqualified, as his time was faster than in the speed test for handicapping.

In the first heat of the five-mile free-for-all L. Beachey won in 7:08 3-5; Martin, 7:30 4-5; Parmelee, 8:21 4-5. The second heat was interrupted by the death of Page.

Harvey Crawford flew 3:37 3-5 in the amateur duration.

The regular duration results follow: Cooke, 2:20:25; Fish, 47:55; Turpin, 38:37; Martin, 33:35; Kearny, 30:05; Parmelee, 29:13; Atwater, 21:30; Willard, 20:40; Lincoln Beachey, 19:00; Hoff, 13:00; Hillery Beachey, 12:05; Page, 12:00; St. Henry (Curtiss), 7:40.

Notes and Gossip of the Los Angeles Meet

Thursday night at the aviation headquarters room in the Alexandria Hotel, a meeting of the aviators that were going to participate in the coming meet was held. Dick Ferris read

over the list of events and talked over several objections that were made to some of the rules. The meeting was well attended by practically all the aviators who are in the city.

There was talk to the effect that some of the licensed aviators had received notice from the Aero Club of America not to compete in the meet under penalty of losing their licenses; but, even if true, there is little chance of such a rule, made at this late date by the Aero Club, having any chance to keep any aviator out.

♦ ♦ ♦

Trouble between C. P. Rodgers and Dick Ferris came to a head Thursday afternoon when Rodgers signed his entrance blank and afterward tore it up, refusing to enter the meet without a guarantee more than the other aviators were receiving. This Dick Ferris refused to give, and as the shed that Rodgers was using was needed for the other machines entered in the meet, Rodgers was asked to vacate it and take his planes off the field.

♦ ♦ ♦

C. P. Rodgers had his cross-the-continent EX machine equipped with a locally-built four-cylinder motor of four-inch bore by four and one-half stroke, the standard Wright engine being four and three-eighths bore by four-inch stroke. There was no test made to find out how fast the engine turned up, but Parmelee, who was present, said that it turned the propellers faster than the standard engine, and that the machine in the air climbed better. Rodgers made two flights with it, one of about 20 minutes, but on going to start the engine up for the third flight, it was found that the bearings had burnt out, and so further tests were postponed till after the meet.

♦ ♦ ♦

Howard W. Gill, who in the past has always driven Wright machines, will use Burgess biplanes exclusively. He has one of the standard passenger type fitted with extra gasoline and oil tank that give it a capacity or duration equal to that of any machine entered. It is understood that an extra Burgess plane that he has in reserve will be equipped with one of the 60-horsepower Hall-Scott engines, with which equipment he will endeavor to establish new American records during the meet. As a safety precaution, the Burgess biplane driven by Gill has been fitted with duplicate warping wires and pulleys, each set of wires being entirely separate and independent of each other and each capable of operating the machine independently.

♦ ♦ ♦

With the entry of Lincoln Beachey to drive a Curtiss plane, the altitude events will undoubtedly prove a strenuous contest between Beachey and Parmelee, who has not only fitted his machine up for altitude work, but has equipped himself with fur-lined boots and heavy clothing to stand the cold. Parmelee has long had his eye on the altitude mark. He will use one of the Wright EX models, fitted with a Wright four-cylinder motor.

♦ ♦ ♦

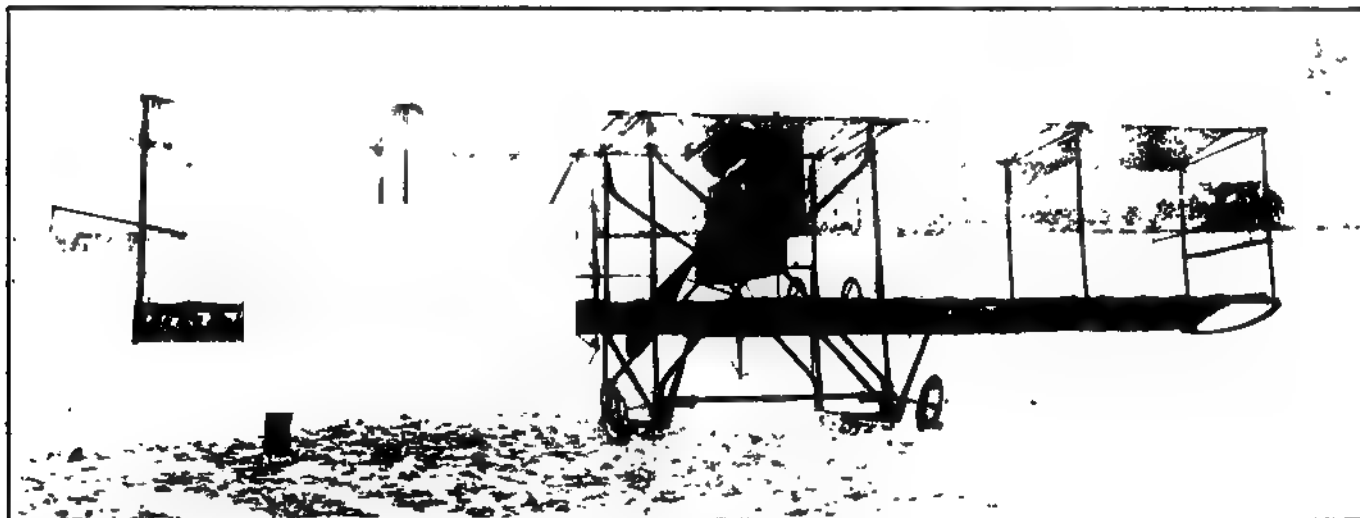
On January 18, Glen L. Martin tried out his newest biplane, after equipping it with two five-foot sections in each side, giving it an increase of 100 square feet of surface. This gave his top plane a spread of 41 feet, even more than that of the Wright machine. Martin tried it out for two flights and found that while the machine was steadier in flight, it was equally slower in responding to the controls. He afterward took the sections off, though he said that he would put them on again when he went after the American endurance record, at present held by Howard Gill.

♦ ♦ ♦

On Wednesday, Albert Elton, of Youngstown, Ohio, arrived. To ship his Wright machine, it was all taken apart and packed in boxes so that it could be sent by express. He had it equipped with two 12-gallon gasoline tanks, which gave him a gasoline capacity for five hours flying, and had signified his intention of going in for the totalization of duration. He and his manager are continually seen around town in a Cadillac touring car that the local Cadillac agency has loaned Elton.

Charles E. Hathorn, of Mason City, Ia., has recently flown his Curtiss-type biplane from the prairie between Mason City and Clear Lake, Ia.

1912 HEADLESS BENOIST BIPLANE DESCRIBED



FRONT VIEW OF THE BENOIST BIPLANE.

The new 1912 Benoist biplane is a complete redesign, comprising numerous new features that facilitate shipping, add speed, increase the safety, and greatly increases the carrying capacity. The design is the result of the combined experience of Tom Benoist and Antony Jannus, and is in no wise an experiment, having been evolved from a series of very careful experiments during a period of more than three years' practical and successful aeroplane manufacturing.

The new biplane can carry two men and fuel for about three hours without changing seats, tanks, or carrying surface, and can carry much more by adding surface to the wings. This is easily done, but slightly reduces the speed of the machine.

The new plane has an estimated speed of 68 miles per hour, with one operator, and a speed of 62 miles per hour with two operators. The minimum flying speed is 31 miles per hour, which gives the machine a great range of flying speed. It is in this range that makes the machine a rapid climber and such a capable wind flyer.

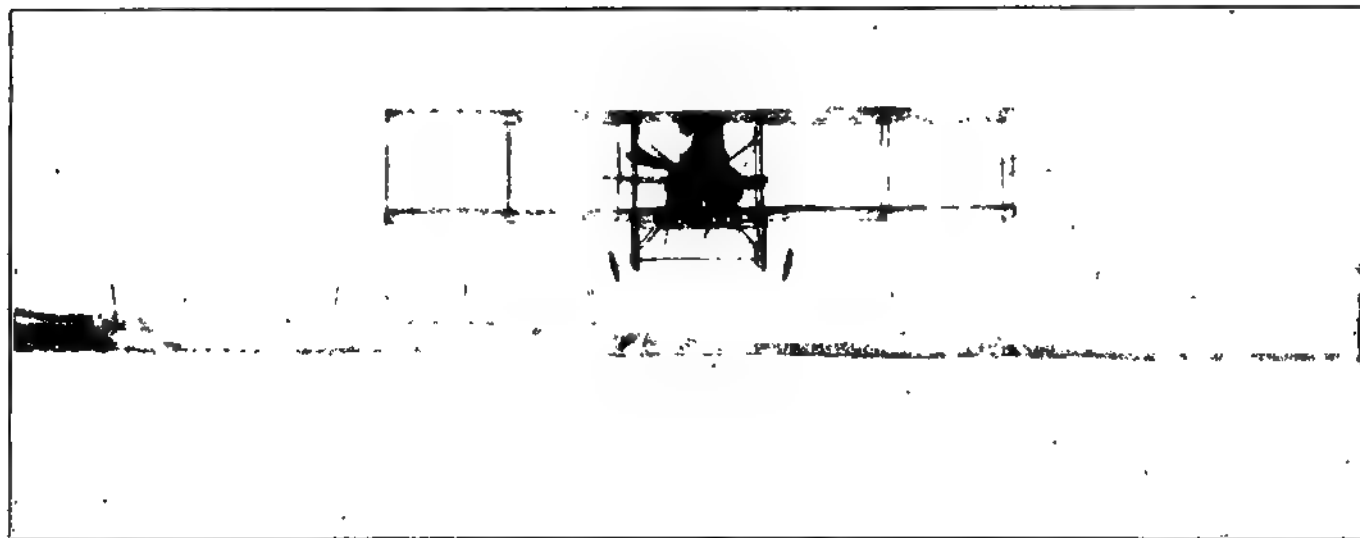
The biplane is of the headless type, with main planes 30 feet spread. The overall width with the two 4-foot ailerons is 38 feet. The length overall from front to back is 22 feet 6 inches. The tail is 12 feet wide, and is a flexing or bending tail instead of the old method of construction in which the tail is flat and hinges like a shutter. The rudder and ailerons are all constructed in this fashion, and it is due to this system that great economy is realized in controlling the machine. This type of flexing surfaces increases the control

of the machine without using as much power. The ribs of the control planes are made of the finest spring steel, and there is absolutely no chance for the bending to reduce the structural strength.

The wings and the wing curve are the same as in preceding machines, it being found in the experiments that their efficiency was too great to justify any alteration, except in the structure.

The running gear is of special interest, as it is very strong, simple and flexible. It may also be seen that the strains and shocks of landing are not borne by the wings, but are transmitted directly to the landing gear; it is therefore impossible for one to have a damaged wing as the result of a bad landing, and go into the air in a crippled condition without knowing it. This running gear lends itself to easy shipment, and there is so little to it that a great saving in head resistance has been realized, giving the machine great speed in the air. The machine may be maneuvered around the ground, under power, with the same facility as an automobile, thus doing away with the necessity of having the usual army of helpers to wheel the machine to the starting point. The running gear is very strong, and permits flight from, and landing upon, very rough ground without damage to the plane.

It will be noted from the photographs that there are but two wheels directly mounted on steel springs. This method has been found lighter, stronger, and more serviceable than

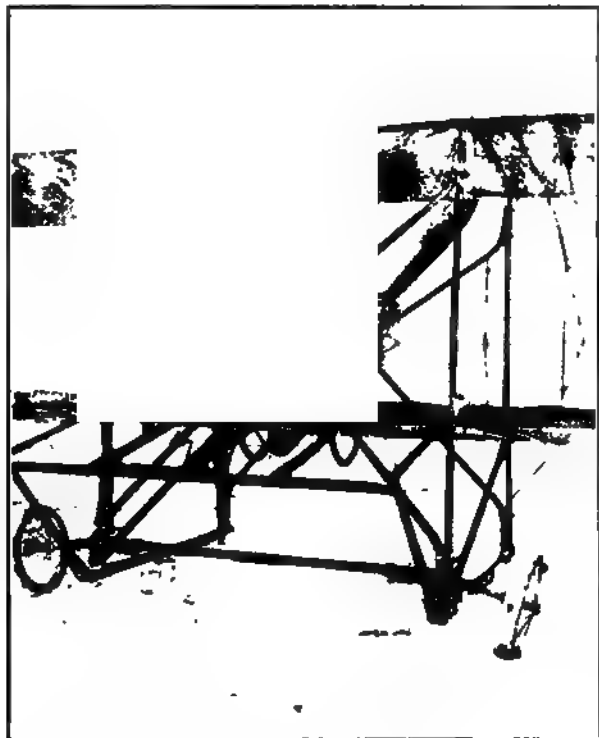


ANTONY JANNUS FLYING NEW BENOIST HEADLESS WITH DUAL CONTROL, ABOVE THE SNOW AT KINLOCH.

any of the more elaborate forms of flexible landing gear involving rubbers and a greater number of wheels. The location of these wheels well in front of the center of gravity is a sure preventive of standing the machine on its nose. The skids supplementing the wheels are a further protection where very rough ground is encountered. The back ends of these skids are flexibly shod with spring steel, adding more cushion for landing, and preventing wearing of the light spruce skids.

Another one of the features is the large master guy wire running from one wing to the other. The function of this wire is to hold the machine together, should part of a wing break off in the air. It is to an aeroplane what the safety catches are to modern elevators, and is not called into use unless something important breaks. It is the "ounce of prevention."

The controlling planes have been mentioned, but they are but a part of the control system, and in this connection it is well to describe the controlling mechanism. The tail is actuated by the fore and aft movement of either of the two upright hand levers that are seen interconnected, and convenient to the right hand of either operator. The ailerons, or lateral controls, are operated by a right and left movement of these levers. This is nothing more than the Farman system, but the construction used is different and better, inasmuch as the right hand operator has the stronger lever,



DUAL CONTROL AND STEEL SPRING RUNNING GEAR.

and the control wires lead from this lever, so that an unruly pupil could do no more than break his lever. The other advantage of the arrangement is that no matter which seat you learn from, the controls set the same, and there is nothing to learn over again when flying without the instructor. The rudder is operated by the wheel located at the side as the arm of a chair, and forms a comfortable and secure grip for the left hand. The movement of this rudder wheel is the same as when previously placed in the Curtiss control, merely being translated into another plane of movement; back toward the left side of the body steers to the left, and over and away from the left side of the body steers to the right. These steering wheels are likewise the same from either seat. For security against untrained pupils or passengers, the wheel on the left seat is easily disconnected by changing a large cotterpin from one hole to another, thus leaving the wheel free to turn without moving the rudder, and

still affording a comfortable hand grip for the passenger. The design of this control is for comfort, so that one may use it for many hours at a time without fatigue; so that there may be great freedom of movement, to insure plenty of control under all conditions.

The wings are built up of interchangeable sections, so that shipping in crates may be easily effected. This method of shipping is by far the most trouble, as it involves complete disassembly. Where a machine is to be shipped over the road, it is only necessary to detach the tail, mount same on one end of the plane, remove the axle and turn 90 degrees in the same plane. The machine may then be towed by an automobile or wagon, and is flexibly mounted on its own running gear, with rubber tires and steel springs to absorb the shocks of the road. However, it will be noted that there are but few parts to the running gear, and that the engine bed is the keystone of the structure. It is never necessary to remove the engine from this bed, as it forms the bottom of the crate. It is only necessary, in assembly, to bolt the diagonal braces to this bed and the center section is erected without any question of adjustment, as there are no wires or turnbuckles to it.

The engine bed is designed as the strongest part of the machine, it being obvious that the motor delivers the greatest strains to the machine, both gyroscopic, in the air, and just plain shock in landing. The engine bed is the logical thing to build from, and it is with this idea that this construction has been used. The appearance of great weight is deceptive, as the side boards of the bed are very thin. This leaves a very convenient space beneath the motor for placing a 35-gallon tank. This tank further acts as a drip pan to keep the lower plane free from oil. The 35-gallon tank feeds to the upper 15-gallon tank by air pressure. This pressure is provided by the operator, who actuates a small hand pump.

MANUFACTURERS BUSY ON COAST

San Francisco, Cal., January 17.—The California Aviation Company is finishing and tuning up A. Bowen's Bleriot-type monoplane which embodies a good many new ideas in aeroplane construction original with Bowen. The engine to be used is an eight-cylinder two-cycle rotary of an entirely new design patented by Barnes brothers. B. Barnes was formerly connected with the Murray Airship Company, of San Francisco, as chief mechanic. The new machine will be tried out at an early date at Larkspur, Marin County.

H. Woerner made a six-minute flight at San Mateo, Cal., in the Schick and Warren Bleriot-type machine on January 10, making a simple, straightaway flight, not having power enough to make any turns. He was unable to land on smooth ground, and finally landed in a marsh, breaking his landing gear. The machine is being overhauled at the shop of the California Aviation Company, where a new landing gear is being put on. Woerner uses an Anzani motor.

Didier Masson, the French aviator who has been making flights in the vicinity of San Francisco during the winter, has given up flying for the present and will devote his time to the manufacture of his own machine, which he is planning for the coming summer season.

COOKE QUALIFIES FOR LICENSE

Oakland, Cal., January 13.—Weldon B. Cooke qualified as a licensed pilot at Adams Point today before a committee from the Pacific Aero Club. As is usual when Cooke flies, he carried off his part of the program without a hitch, and came through with flying colors. After making his official trials, Cooke was presented with a loving cup by the Oakland Chamber of Commerce.

TO TRY STABILITY DEVICE AT MEET

San Francisco, Cal., January 17.—The California Aviation Company today shipped an automatic stability device made for Osam Shudawa, a Japanese, who will demonstrate it at the Los Angeles meet. Several influential Japanese are behind the inventor and intend to promote the device in the United States and Japan.

HOW TO DESIGN A MODERN AEROPLANE*

By E. R. ARMSTRONG

Fig. 12 shows a camber of one to 13.5 to be the most practical, as it is almost as efficient as any and brings the load per square foot within the limits used by the different designers who have produced the most successful machines.

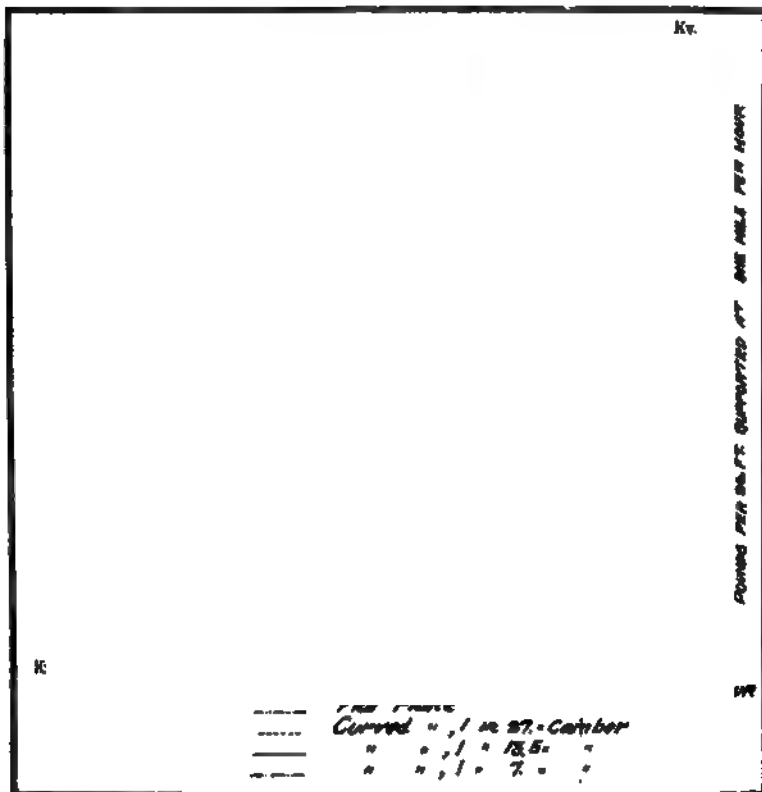


Fig. 12

The very important, but least understood quality of the cambered plane, is the change in the center of pressure with

the change in the angle of attack. On the correct location of the center of pressure on a aeroplane surface depends the stability and balance of the machine as a whole, and there seems to be less information available to the general constructor about this vital feature of designing than about any other point.

In Fig 13 a digram shows the change in the center of pressure of planes of different cambers, but of the same length to breadth ratio.

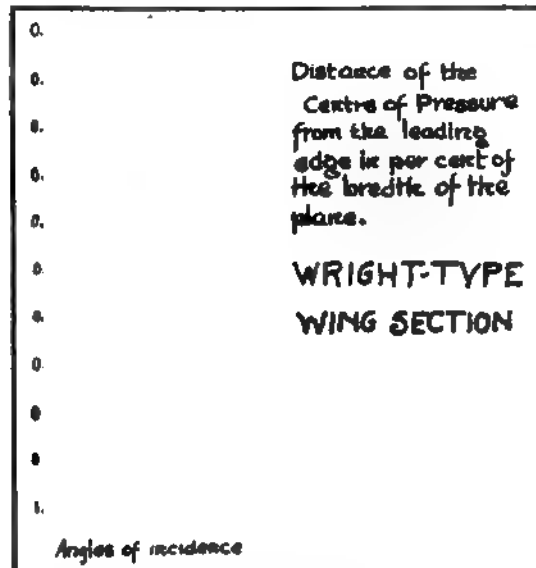


Fig. 14.

For purposes of comparison the change in the center of pressure, with angle, for a flat plane is also given. The examples illustrated on the diagram give the location of the center of pressure on each curve for an angle of eight degrees.

Attention is directed to the great change in the center of pressure for a change of only four degrees in the flying angle.

To show how the center of pressure varies in actual wing sections, above is given the change in center of pressure of wing No. 1 (Wright) for different angles.

Speed in Multi- mi.pr.hr. piler.	Speed in Multi- mi.pr.hr. piler.	Speed in Multi- mi.pr.hr. piler.	Speed in Multi- mi.pr.hr. piler.
1	1	26	676
2	4	27	729
3	9	28	784
4	16	29	841
5	25	30	900
6	36	31	961
7	49	32	1024
8	64	33	1089
9	81	34	1156
10	100	35	1225
11	121	36	1296
12	144	37	1369
13	169	38	1444
14	196	39	1521
15	225	40	1600
16	256	41	1681
17	289	42	1764
18	324	43	1849
19	361	44	1936
20	400	45	2025
21	441	46	2116
22	484	47	2209
23	529	48	2304
24	576	49	2401
25	625	50	2500
		51	2601
		52	2704
		53	2809
		54	2916
		55	3025
		56	3136
		57	3249
		58	3364
		59	3481
		60	3600
		61	3721
		62	3844
		63	3969
		64	4096
		65	4225
		66	4356
		67	4489
		68	4624
		69	4761
		70	4900
		71	5041
		72	5184
		73	5329
		74	5476
		75	5625
		76	5776
		77	5929
		78	6084
		79	6241
		80	6400
		81	6561
		82	6724
		83	6889
		84	7056
		85	7225
		86	7396
		87	7569
		88	7744
		89	7921
		90	8100
		91	8281
		92	8464
		93	8649
		94	8836
		95	9025
		96	9216
		97	9409
		98	9604
		99	9801
		100	10000

FIG. 16.

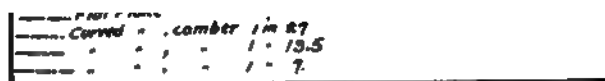


Fig. 13

Increasing the angle of attack increases the lift and drift almost in proportion to the increase in the angle, especially for small angles, or increasing the angle of attack from 4 to 8 degrees will approximately double the lift. This is a general rule and is not strictly true.

Below, in Fig. 15, will be found the correct relations of lift and drift per square foot for wing No. 10 for angles up to 15 degrees.

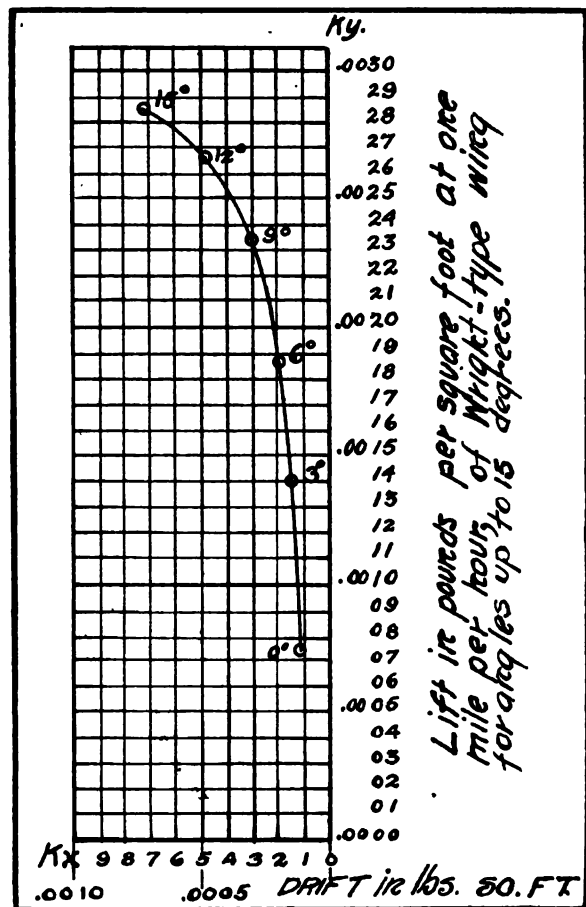


Fig. 15

The wing for the figures given has a speed of one mile per hour, the lift and drift are given in pounds per square foot. As the lift and drift of any aeroplane surface is proportionate to the square of the speed, Fig. 16 shows the number of times the lift and drift of wing No. 1, as shown in Fig. 15 for one mile per hour at different angles of attack, is to be multiplied by to obtain the lift and drift at greater speed in miles per hour.

These two diagrams, with the assistance of Fig. 9 and 10, which show sections of the different wing curves and wing outlines employed by the different designers, will give within the practical limits of construction, the lift and drift of any type of wing at any speed within the limits of the diagram. In the fifth column of Fig. 10 is the ratio of the lift to drift of the different curves.

When deciding which type of wing section to use, it is well to bear in mind the general performance of the actual machine. It is the aim of the different constructors to produce an aeroplane that will have the maximum lift with the least head resistance, but this quality must not be obtained at the expense of stability. The result is that the different makers have found that for their particular types

of machines that the wing section and shape they use gives the best results for all around conditions. Many forms of highly efficient lifting surfaces have been devised for aeroplane surfaces, but the application of them to practical aeroplane construction has produced a very unstable machine. Since stability is the main point to be considered, attention is directed to the form shown by No. 7, Fig. 9, in which stability is sought at the expense of efficiency. This feature of designing will be taken up in the consideration of control surfaces.

Up to this point the frictional resistance of the air has not been considered, not because such resistance is negligible, but because the resistance from this source that has not already been allowed for in our calculations is so small in amount as to form but a fraction of the total resistance. While it is true that the frictional resistance of the air is proportional to the surface; that is, if the surface is doubled the resistance will be doubled, it also increases about three and one-half times by doubling the speed; it is also true that the frictional resistance of the planes, struts and other parts of the machine exposed to the current of advancement, is included in the head resistance of those various parts and need not be separately computed.

In calculating the frictional resistance of an aeroplane for the purpose of computing the necessary power to propel it, it is only necessary to figure on such areas as the rudder, elevator and tail planes. If other areas, such as fins and keels are used, they also should be included. It is well to bear in mind when computing the area of resistance to include both sides of the area considered. In Fig. 17 is given the frictional resistance in pounds of one square foot of area for various speeds in miles per hour; for the resistance of greater areas multiply the result found for one square foot at the speed desired, by the number of square feet of exposed surface for which the resistance is required. By a study of Fig. 17 it is seen that the frictional resistance becomes more and more important as the speed increases.

As an example of the use of Fig. 17, the frictional resistance of the rudder, tail and elevators of the Nieuport

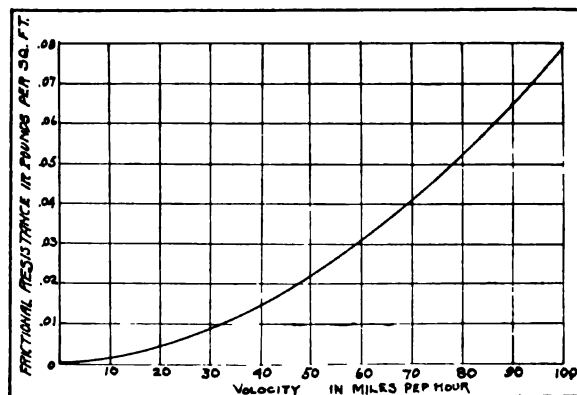


Fig. 17

monoplane will be given. The total area of these members on this machine is about 50 square feet. Doubling this for both sides gives 100 square feet as the frictional surface. As this machine has attained upwards of 80 miles per hour, the calculation will be made for that speed. Inspection of Fig. 17 shows that the resistance of one square foot at a speed of 80 miles per hour is .0064 pounds. This quantity multiplied by 100 gives .64 pounds at the resistance of 100 square feet at 80 miles per hour. At the speed considered, it would take more than two horsepower merely to drag the

control surfaces through the air. It is thus apparent that to reach the highest speed, the control surfaces should be made as small as is consistent with the complete control of the machine.

Care in the selection of such an aeroplane surface and section that will give the least variation in the center of pressure under changes of angle of attack, will permit the use of smaller control areas, and this in turn will give greater speed.

It will be shown later that the great difference in area of the control surfaces of the different machines is made necessary by the different wing curvatures adopted in the different machines.

The fastest and most efficient aeroplane is that one in which the cross-section of the wing is such that the change in the center of pressure is a minimum for any change in the angle of incidence, providing such section has a lift and drift ratio that is as efficient as any other section adopted.

To be continued next week.

CORRESPONDENCE

The chief object of this department is the publication of answers to technical inquiries none of which will be answered by mail. Letters giving information of value to readers will also appear in this column.

[1028] There are some aeronautical problems which I have been trying to get the formulae for, or the answer to, for some time. I am sending you the entire list of questions, to ask if you can let me know the formulae and the way they are worked out. If you have not got the information at hand, is there anyone to whom you could refer, to obtain it for me?

I have written to several so called aeronautical engineers and they have either given up entirely or referred me to some books, which, when I looked them up, left me right where I started. Please don't refer me to any book, as I have looked up almost every one on the market and they leave me right where I started. Direct answers are what I want. Can you give me any?

If these formulae do not exist and if the answers to these problems are obtained simply by hit or miss guess and experiment, please let me know and I will pull out, as I have had enough of that kind of business.

In a few weeks I hope to be well enough to start work on a biplane of my own design equipped with a 100 horsepower motor. The enclosed list of questions is the only thing I am shy on. When I get this information I can go ahead with the design of the machine.

Problems and questions: The curve is parabolic. a is the chord of the "plane;" b , the length of the "plane" (on a biplane the spread); c , the height or depth of the curve of camber; d , the angle of incidence of a ; e , the distance along a from the front or cutting edge to the center of pressure; e , also stands for the point of center of pressure; S , speed in miles per hour; P , weight supported per square foot by the plane ab with the camber c at 8 miles per hour and at an angle of incidence of d .

Problem I.—Given the parabolically curved surface ab with camber c , loaded to P pounds per square foot and traveling 8 miles per hour, how are d and e determined?

Problem II.—Given the parabolically curved surface ab with camber c at an angle of incidence d at 8 miles per hour, how are P and e determined?

Problem III.—Given the parabolically curved surface ab with camber c carrying P pounds per square foot at d degree angle of incidence, how are S and e determined?

In any one of the foregoing three problems.—If d is changed and ab , c , S and P remain the same, does e move forward or back? If S is changed and a , b , c , d , and P remain the same, does e move forward or back? If P is changed and a , b , c , d , and S , remain the same, does e move forward or back?

The writer of the above letter has made the mistake of ignoring the actual fact and conditions of aeroplane designing and building in endeavoring to give a mathematical form to aeroplane surfaces, and his problems are based on such a mathematical form. As there seems to be considerable misapprehension on this feature of aeroplane designing, we will answer the questions more fully than is usual in this column.

In the first place aeroplane surfaces are not truly parabolic, but in the most successful machines are a combination of reverse curves of a more or less circular outline and tangents to these curves. The location of the centre of pressure on aerocurve surfaces suitable for aeroplanes has been experimentally determined in both model and full sized machines, for all the angles practical in flight. By referring to Mr. Armstrong's article now running in AERO on "How to Design a Modern Aeroplane," can be found the location of the centre of pressure on surfaces of different camber, at various angles, also the lift and drift of the different types of wing surfaces used in different aeroplanes. From the figures there given it is found that if the angle of incidence is increased, starting from zero, the centre of pressure moves forward until the angle of twelve degrees is reached. With a further increase of angle the centre of pressure recedes gradually, until it is midway of the plane at an angle of 90 degrees. Change of speed, or of the load carried per square foot, does not affect the centre of pressure if the angle of attack is not changed. The centre of pressure on an aeroplane surface changes only with change in the angle of attack, camber of the surface and the length to breadth ratio of the surface. It is the function of the elevators to correct the change of balance caused by the variation of the location of the centre of pressure caused by the change of any of the above conditions.

[1041] S. H., Newton, Kan.—The model B Wright flies at an angle of a little more than two degrees, and carries two and one-half pounds to the square foot of surface.

[1029] R. H. van S., Dumont, N. J.—It is possible to steer an aeroplane with the use of the wings only. This is done by the use of the wing-warping or aileron control. When it becomes necessary to use the warping for balancing, the rudder must be used in order to maintain a straight course.

[1030] A. B., Sydney, C. B.—We have no record of a hydro-aeroplane glider being towed by a motorboat and making a successful flight.

[1031] A. C., Montreal, Can.—In the event of a sudden, unexpected wind gust striking one wing of a monoplane in which lateral stability is maintained by means of wing warping, the interconnection of the rear edges of the wings will tend to equalize the pressure on the opposite wing in spite of the pilot. Control by wing warping gives the pilot a feel of the air that cannot be obtained by ailerons. The actual working of the Curtiss equalizing device on his aileron control has not as yet been made public.

[1032] O. B., Havana, Cuba—It is quite feasible to drive a Curtiss-type with twin propellers. For a 30-horsepower motor, use a diameter of eight feet and a pitch of eight feet. Drive with chain, using a three to one reduction from the motor.

[1033] H. J. B., Worthington, Ind.—There would be no object in having the propellers move in conjunction with the rudder and elevator to assist in the turning. The complication would be great, with no special advantage. The experiment has been tried, but the result did not show that there was a better control of the aeroplane when it was used.

[1034] J. W. H., Denver, Colo.—For a model aeroplane of such size that rubber bands do not give sufficient power, use one of the model engines now on the market for that purpose advertised in AERO. Spruce is the best material to use for model building.

[1035] E. W. J., Marion, Iowa—It is impossible to say which is the lightest and best engine for an aeroplane now on the market. The weights of aeroplane engines run from three to seven pounds per horsepower, and cost from \$400 to \$5,000. Write engine builders who advertise in AERO for particulars. The Hearst \$50,000 prize for the ocean-to-ocean aeroplane flight has been withdrawn.

[1036] H. C. M., Oklahoma City, Okla.—It has not yet been decided where the James Gordon Bennett cup race will be held in this country. Contestants must be citizens of the country they represent, but may use any machine that they choose.

Business men of Bonham, Tex., have closed a contract with the Curtiss Exhibition for Charles Walsh to fly at the Fair Grounds, January 24 and 25.

E. PERCY NOEL, *Founder-Editor*

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The Editor is pleased to consider MS and photographs for publication, but only material that is likely to prove of interest to the readers of AERO. The Editor cannot undertake to answer technical inquiries except in the columns of AERO.

THE CRISIS

This week in New York, President Taft will sit as the guest of honor at the club's annual dinner—at the banquet of the club which he believes truly represents the sportive side of ballooning and aeroplaning in the United States. It is an occasion that should make the heart of every true follower of the sport or the science beat proudly or at least sympathetically. But will it?

Knowing that its future as a national governing body depends upon the moral support of the whole country, we have endeavored in these columns to give all possible credit to the Aero Club of America, particularly since the election of Mr. Collier to the presidency, following his severance of business connections

that were not compatible with the executive position. It has been AERO's object to assist as far as possible to make this club an organization of national power by putting before Americans all news of the club's work that would tend to lift from it the unfortunate reputation it has had at home and abroad.

Undoubtedly there has been an improvement in the Aero Club of America's methods, and an almost general appreciation of it on the part of the aeronautic public, but the odor of unsavory things of the past lingers despite our own efforts to remove it.

The Aero Club of America does not yet hold the place that it should in the estimation of the clubs, the individual aviators and aeronauts it should govern. On the contrary, it stands on very sandy ground, and there is a menacing undertow.

Balloonists are beginning to think about the international balloon race, and to wonder how the matter of this country's representation will be decided. Aeroplanists are thinking similarly in regard to the international aeroplane race and are speculating on how the championship event itself will be controlled. Abroad they have not forgotten Belmont Park.

These questions are not raised to stir up sedition—there is more of that now than is good for the longevity of the national body—but rather to bring to the attention of the club, at this crucial time, the conditions that exist.

To put it in the vernacular, "It is up to the Aero Club of America to make good, now or never."

Other aero clubs have grown strong in their own right in the past six months, aviators and aeronauts have become little powers in themselves.

One mis-step now and the organization to which we look for proper government will totter. A second mistake may cause its fall. And if the Aero Club of America once more loses the respect of the affiliated clubs, its demolition as a national body is certain.

Saturday night at Sherry's must mark an epoch.



BIBLIOGRAPHY

A Compendium of Aviation and Aerostation, Balloons, Dirigibles and Flying Machines. By Lieut. Col. H. Hoernes. With a preface by J. H. Ledeboer, B. A. 54 illustrations. 16mo. Cloth, \$1.00 net.

This compact little volume is intended for the use of the general reader as well as the professional aviator. It is written in a popular style and treats in an exhaustive manner the scientific development of aviation, explaining the why and wherefores of different kinds of flying machines. It is also a complete history of the art of flying, from the earliest days of ballooning to the present day of aeroplanes.

From a perusal of this book the beginner can quickly arrive at a practical working knowledge of present day flying machines and the principles on which they are based. It also contains definitions of all the different terms used.

The expert will find this a handy book for quick reference.

AMONG THE AVIATORS

T. F. HAMILTON IN HYDRO HE DESIGNED.

Arthur J. Heath, of Fond du Lac, Wis., an expert motorist, is considering making a contract to learn to fly a Bleriot monoplane.

* * *

The American Federation of Aviators, organized recently in Denver, Col., is arranging for a series of lectures to be given by George W. Thompson, the president, and E. C. B. Howell, secretary. The organization is also planning to hold an aviation meet at Sable, near Denver, in the near future.

* * *

Charles K. Hamilton was a visitor in Galveston, Tex., while on his way to the Pacific coast, Saturday, January 13.

* * *

A new Cleveland aero club was provisionally organized on January 14. Ray Johnson was made temporary chairman and Earl H. Wiseman, temporary secretary. It is planned to obtain a flying field near Cleveland. Several of the members own machines.

* * *

Charles Walsh was scheduled to fly over Cleburne, Tex., January 19, in a Curtiss biplane.

* * *

On account of an epidemic of meningitis the Health Officer of Gainesville, Tex., has ordered a postponement of the exhibition which was to have been given there January 24 and 25.

* * *

The National Aeroplane Company's school of aviation, organized in Galveston, will be conducted on Galveston island. The first shipment of aeroplanes was due last week. The following are interested in the school: Mart McCormick, Paul Studensky, Lester V. Bratton, Rudolph, Sesrak and F. G. Joytz. J. H. Worden, licensed pilot, and Bleriot graduate, is the monoplane instructor. Studensky, also a licensed pilot (French) and Mart McCormick are the instructors. Land and water flying will be taught.

CURTISS FLIERS DESERT SAN DIEGO

San Diego, Cal., January 18.—Almost the entire Curtiss camp on North Island has been moved to Los Angeles for the big aviation meet, beginning January 20. In fact, the Curtiss representation at this meet is the largest that any manufacturer has ever had at any previous meet in this or any other country. Of the well-known Curtiss aviators who will take part, are Beachey and St. Henry, and in addition to these there will be recent graduates of the Curtiss school at North Island, Messrs. Hoff, McCalley and Page, and the Curtiss pupils are Mr. and Mrs. W. B. Atwater, Callan, Mayo, Malick, Underwood, Hoover, Spalding and Solbrig, a total of 14 fliers, with seven Curtiss machines.

Mr. and Mrs. Curtiss will also be in attendance at the meet, as well as Ward Fisher, manager of the Curtiss school at San Diego, and Mrs. Carmody, daughter of Mrs. Atwater. The entire party of 24 left San Diego today for Los Angeles, where the flying will begin tomorrow.

The aviators who have been at the Curtiss camp on North Island have arranged to carry on a number of experiments with hydroaeroplanes in connection with the Pacific fleet, particularly the problem of launching a hydroaeroplane from the deck of a warship. The fleet will not reach San Diego for several days, and in the meanwhile Lieutenants Ellyson, Rodgers and Towers and Ensign Herbster have taken up the use of the wireless telegraph from an aeroplane. In these latter experiments they will be assisted by G. H. Curtiss, using the new flying boat, or hydroaeroplane, equipped with a 75-horsepower motor.

Mrs. Atwater has originated a new method of catching sea-birds. Today she asked Lieut. J. W. McClaskey, instructor at the Curtiss school, to take out the hydroaeroplane, with her as a passenger, and attempt to catch a pelican or gull with a net. The instructor promptly agreed, and for almost half an hour the big hydroaeroplane with Lieut. McClaskey and Mrs. Atwater chased pelicans and sea gulls up and down the bay. They discontinued the hunt only when a large pelican barely escaped becoming entangled in the propeller, which would have smashed it and possibly caused an accident.

AUGUSTA PROVES WINTRY LOCATION

Augusta, Ga., January 14.—Adverse weather conditions permitted flying at the Signal Corps Aviation School only three days last week, and finally brought forth many jokes about the "Sunny South," when the ground was covered with several inches of snow and the thermometer finally reached 14 degrees. The rain on Friday night turned to sleet and then snow, which froze all over the tent hangars, and the weight of which broke the poles and rigging of several tents, but none of the aeroplanes were damaged.

It is impossible to remove the ice from the hangars until warmer weather arrives, and in the meantime all aeroplanes are out in the snow.

During the three days of good weather 26 flights were made by Capt. Chandler, Lieuts. Arnold, Milling, Kennedy, the total duration being three hours and 55 minutes.

THE DIARY OF FLIGHT

WEDNESDAY, JANUARY 10.

Ann Arbor, Mich.—University of Michigan monoplane glider rose to a height of 300 feet in first trial, Carlyle Fiedner, of Dayton, operator.

THURSDAY, JANUARY 11.

Redding, Cal.—Roy Francis (Gage biplane), and Frank Bryant (standard Curtiss) gave exhibitions.

SATURDAY, JANUARY 13.

Dominguez Field, Los Angeles, Cal.—Howard Gill (Burgess) instructed pupils. P. O. Parmelee (Wright) took Frank Goodale, dirigible builder, for cross-country flight. J. C. Turpin (Wright) flew.

Oakland, Cal.—Weldon B. Cooke qualified for pilot's license in Curtiss-type with Roberts motor.

SUNDAY, JANUARY 14.

Dominguez, Los Angeles, Cal.—Flying suspended by order of meet management.

Redding, Cal.—Frank Bryant and Roy Francis flew.

TUESDAY, JANUARY 16.

Dominguez, Los Angeles, Cal.—Miss Blanche Scott flew Glen Martin's biplane 12 minutes. Howard Gill (Burgess) taught pupils.

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BULLETIN

Quarters Opening Posponed Until February 1

For various causes it has been found wise to postpone the opening of the club quarters until Thursday, February 1, when the original program will be carried out.

The postponement was caused partly by the desire of a number of technically inclined members to accept invitations to a banquet to be tendered Charles Y. Knight, inventor of the sleeve valve motor, on the same evening. Besides, A. B. Lambert, former president of the club, who was to have been one of the speakers at the club meeting, has been inadvertently called from the city and will not be able to return in time for the meeting.

It is hoped that this necessary postponement will only serve to heighten the interest and to make the attendance greater a week hence.

16 PASSENGERS CARRIED IN ONE DAY

Kinloch, Mo., January 22.—With the weather ideal for flying, Antony Jannus took 16 passengers for flights in the 1912 Benoist with Roberts motor, yesterday afternoon. Five of the passengers were pupils and most of the others had their first experience in the air. The flights started at 2 o'clock and continued until Jannus had spent two hours in the air.

The most spectacular flight of the day was that with Miss Catherine Stimson of Jackson, Miss. Miss Stimson came to St. Louis last Wednesday to enter an aviation class at Kinloch Field. When carried 1,000 feet in the air during her first ride Wednesday she begged Jannus to return to earth. Yesterday he took her up even nigher.

At times his machine was banked almost perpendicularly. Before landing Jannus cut out the motor and made a sharp glide of 200 feet. Miss Stimson closed negotiations for the course as she stepped from the machine.

Hugo Mueller, a St. Louis automobile dealer, enjoyed the first and longest flight of the day. Though weighing more than 200 pounds, he was carried at an altitude of about 1,000 feet. The flight lasted 15 minutes. The next passenger was Major F. R. Lang, U. S. A., who is in the recruiting service in St. Louis.

Some of the other passengers were Jesse E. Carpenter and wife, of Chicago, Mrs. E. A. Penn, Miss Maude Forster, Miss Margaret McMahon and Charles Washem. Washem took photographs of the surrounding country from the aeroplane.

WILD RETURNS WITH A PARSEVAL

New York, January 20.—Horace B. Wild of the Aero Club of Illinois has just returned from Europe with a lot of good news, and an apparently illimitable fund of interesting information picked up at the aero show in Paris, and at the flying fields of France, Germany and England. To begin with, Wild purchased a Parseval dirigible in Berlin for a syndicate of members of the Aero Club of Illinois, of which Harold F. McCormick is the active spirit. This dirigible will be used during the summer for flights between probably Chicago, St. Louis and Milwaukee. The dirigible bought by the Illinois Club is one of the smaller Parseval type. Wild also hopes to take to Chicago a French Zodiac three-passenger-carrying dirigible.

While abroad he had a ride in a Parseval and two trips in a new and larger Demoiselle that Santos-Dumont has developed. By the way, Wild reports that Santos-Dumont has a 35-horsepower motor that has made a non-stop run of 61 hours on the bench.

Wild is amazed with the progress aviation has made abroad, and especially in France. As other travelers have reported, flying is so common around Paris that only broken records and broken necks are reported in the newspapers. Every fine day aviators are to be seen buzzing like bees around the Eiffel Tower. On New Year's Eve scores of aviators went up from the various flying grounds at midnight in a scramble for the honor of being the first airman to fly over Paris in the year 1912. Shortly after 12 a. m., on January 1, Wild saw four aeroplanes fly down the Champs Elysee, circle the Grand Palais, and return to Issy. And not a line of this got into the Paris newspapers.

What Wild saw at the Paris Aero Salon exceeded all his expectations. The perfect finish of all the aeroplanes particularly struck him. Many of the machines were as elaborately veneered and polished as a \$10,000 automobile. Then again, he was surprised at the fitting of the aeroplanes. He saw in the French machines footwarmers operated by the motor exhaust, speaking tubes between the pilot and passenger seats, wireless outfits, rapid fire guns and richly upholstered seats.

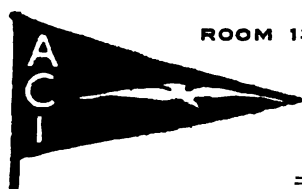
There were 38 monoplanes and 15 biplanes at the show. Only three of these could be called freaks. All the rest had flown. At the 1909 exposition the Wright biplane was the only machine shown that had actually made a flight.

In Germany and France the aeroplane was a commercial proposition. The armies had to have aeroplanes, hence the builders could afford to put up big factories. Out of all the machines on the main floor at the show Wild noticed that only two had front controls. The majority of the machines had the motor and propeller in front of the pilot. In the monoplanes all but a few had the fuselage entirely covered in. Wood was being eliminated in the construction, more than one machine having even the wings covered with thin sheet steel. Every machine had double control wires. There were 62 motors of from 25 to 200 horsepower in the show. As to the work outside, at Issy les Molineaux Wild saw 100 aeroplanes and two big dirigibles.

As an instance of the way the armies abroad are keeping as quiet as possible over their aviation activities, Wild says in Italy he saw three carloads of aeroplanes being shipped to the army in Tripoli to be used against the Turks. He knows for a fact that 18 Nieuports were dispatched, and from what he afterwards saw and heard at the Bleriot works, believes at least 60 aeroplanes were sent by Italy to the front.

Two mechanical novelties particularly interested Wild at the show. One was a method of using two Gnomes to drive one propeller. The problem was solved by means of automatic speed clutches—on the principle of the bicycle coaster brake. With this arrangement if one engine missed it would be automatically thrown out of gear and would not interfere with the running of the other motor. When fitted to a monoplane the two motors revolve, one on each side of the "bow." The other novelty was a propeller fitted to a Bleriot whose pitch automatically became higher as the motor increased its speed. In other words, the pitch could be regulated by the throttle. The chief advantage claimed for this invention is that it gives more power to a machine on making turns, during which maneuver the engine always races, owing to the fact that the whole aeroplane is slowed up.

THE AERO CLUB OF ILLINOIS



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BULLETIN

To the Members of the Club:

At the regular annual meeting of the Aero Club of Illinois, January 16, Tuesday, at the Auditorium headquarters, a quorum was present, and James E. Plew, president, occupied the chair.

Officers as above noted, the regular ticket for 1912, were reported by the tellers, Chas. E. Bartley, Grover F. Sexton and James S. Stephens, as having been elected. The reports of the retiring officers were submitted and approved. Votes of thanks were tendered. The treasurer's report indicated that payments of 1912 dues are being made rather too slowly, but that on the whole the condition of the club's finances to be greatly improved over that existing one year ago. The business manager's report indicated in full detail the large volume of the club's office receipts and expenditures since the previous report. The secretary's report was an instructive review of important occurrences since his assumption of office, and included several suggestions offered as a guide for future policy.

HAROLD W. ROBBINS,
Secretary.

Mud Benefits "A" Captain

"A" Company's captain, N. G. Conybear, wrote the "Colonel" on the fifth inst., that anything to which the name of "Mud" attached stood for Mecca in his condition of mind at the time, and that he was going to Mudlavia to acquire new inspiration. Conybear stated that he wished to go on record as saying that "We should not stop in enrolling names on our roster until we shall have secured 10,000." Later he proved what could be done by sending in a new application obtained while flat on his back in the medicinal mud.

Membership Luncheon, "D" Company

"D" Company of the membership committee reported at noon Wednesday, January 17, at headquarters, with an outline of their work to come, and with some new applications already on hand.

Representing Bion J. Arnold, who has been called on business to San Francisco, F. A. Sager suggested that the company would undoubtedly make a record, and would work along new lines. These will have been discussed in detail at the general membership luncheon, to be attended at the Auditorium on January 24, Wednesday, noon, and to be reported in the following issue.

Muffly 10-75 Rotary

Chicago, January 20.—Within a circle of 25 inches diameter is contained the dynamic force of the 75-horsepower, 10-cylinder Muffly hydrocarbon motor, as stated today by Glenn Muffly, who is known by his former connection as sales manager for the Adams Company, Dubuque, who introduced the revolving motor long ago in automobile power plants.

It has been very aptly suggested by Muffly that it is not every stationary gas engine manufacturer or designer who is able to produce a rotary engine that will perform con-

sistently. There are so many more entering factors to be appreciated, and which can be properly taken care of only as a result of experience with this particular type.

The Muffly Motor Company, with headquarters now on Canal street, Chicago, has started production of the motor built to Muffly's specifications. The 10 cylinders, 4½-inch bore, arranged in twin units, revolve in vertical planes and in the same direction. The precursors of this motor are reported as running for days at a time operating machine shop equipment 10 to 15 hours per day.

Personal Paragraphs

The fame of the Aero Club of Illinois is going to every continent, and probably every country on earth sooner or later, as noted in the following connections:

Robt. G. McGann departed Friday, January 19, for Africa, particularly Egypt and the Nile. The Khedive is a prospect.

P. L. Battey, for Bion J. Arnold, now on the Pacific coast, will be interested, and they illustrate the "Kapuhill" as Panama district, where engineers are doing great things, where one multiplies his dollars by 16 beyond the border, and where hops from ocean to ocean by hydroaeroplanes are to be made practicable by the great canal.

Capt. Thos. S. Baldwin and Lee Hammond advise the Aero Club of Illinois, from Honolulu, Hawaii, that they are "Still going" toward the land of the rising sun, where the Mikado will be interested, and they illustrate the "Papuhill" as among the great fish to be captured.

Frank E. Scott, bound also for the "Flowery Kingdom," leaves Company "E" on February 1, with instructions to report great progress on his return.

Horace B. Wild writes from Italy that he has been in the tomb of the Capuccini—but not for long—and that he has made the Aero Club of Illinois known to some live ones.

Telephone Harrison 3289 and see if you get the Aero Club. Try it.



1,013,402, January 2, 1912.—George W. Kingsbury, New York, N. Y. A propeller including a shaft, a frame carried by the shaft and having resilient blade supports, flexible blades pivoted to the frame to swing to a non-working position when the propeller is at rest, and to a working position against said supports when the propeller is in action, and means for bending said resilient supports to vary the working angle of the blades.

1,012,927, December 26, 1911.—Fridolf N. Spolander, Chicago, Ill. A flying machine embodying a plurality of forward superposed and rear superposed planes, a framework of rods connecting said series of forward and rear planes, an operator's platform connected at its ends, and spanning the space between said rods midway between said forward and rear planes, an engine and propeller for forward propulsion, supported on said platform, a series of lifting propellers and driving shafts therefor, supported on the rods connecting said forward and rear planes, means forward and aft for steering the vessel, and flexible connections with said means operable from the operator's platform.

1,013,342, January 2, 1912.—Romeo Wankmuller, Berlin, Germany. A dirigible balloon having a gas bag and a car suspended below the same, means on the car for projecting signals and advertisements, and a screen arranged in an inclined plane on the gas bag below the same, the said screen to receive the signals and advertisements and serving as a stabilator.

1,013,952, January 9, 1912.—Joseph H. Price, Fort Worth, Tex. A flying machine having a frame including a tubular casing, a propeller, gearing including shafts journaled within said casing for driving said propeller, a plane mounted on said frame above said casing, wings below said plane pivotally connected to said casing, handles for operating said wings, a rudder and a horizontally disposed rod connecting said rudder to said tubular casing.

Model Aeroplanes

Many Desire to Organize Clubs

The wide interest in the movement of organizing the American Aviation Association to act as the national body to govern model clubs in this country has extended to experimenters in the allied lines of kites and gliders, and it has been decided to include clubs organized to promote such interests among the affiliated clubs of the association.

It is suggested that all organizers of model clubs provide for the promotion of kite flying, gliding as well as model flying.

The following additional names have been received from those desirous of organizing clubs:

NEW JERSEY.

Paterson—Howard Pyle, 787 Madison Ave.

Paterson—Prescott Smith, 17-18th Ave.

NEW YORK.

Marlborough—R. J. Caniff, care of Shortt-Caniff Co.

Homer—Donald C. Foster.

Riverhead, L. I.—H. E. Cinklin, P. O. 299.

TENNESSEE.

Nashville—Arthur K. Breast, 915 Fourteenth St.

CANADA.

Hamilton, Ont.—I. S. McKenzie, 22½ McNab St., N.

Building A Model Antoinette

By Waldo G. Clegg.

Many model builders, especially the new enthusiasts, admire the appearance of large machines and attempt to model their little ships after them. These replicas though often very neat and graceful in appearance are usually very poor flyers. This is especially true of models of the Antoinette and Bleriot types.

On account of the position of the motor and operator on a large machine the center of gravity is near the front allowing the main planes and the tail to be kept the correct distance apart. In a model there is no operator and the motor's weight is spread over the entire length of the machine, instead of being concentrated at the front. This

causes the center of gravity to fall very near to the rear, and consequently the main planes must be placed very near the tail. This makes correct balancing a difficult task.

The Antoinette model in the following description overcomes this and other difficulties to a considerable degree. The design was evolved by experimenting with 10 machines of this type and after making numberless alterations in the shape and position of the main planes and tail.

The motor base is a piece of spruce, one-half inch square, shaped to a cross section as in the detail B. A block of wood should be glued to it at the rear to receive the stationary hook. The forward bearing block, is a continuation of the front skid upright. It is spruce, $8\frac{1}{2}$ inches long, $1\frac{1}{2}$ inches projecting above the base. This is clearly shown at B, as is the method of attaching it to the base by glue and screws.

The landing gear is particularly efficient, especially as regards propeller protection. After its design was decided upon and the model actually built, it was changed from model to model and in several hundred flights not a propeller was broken or cracked, nor were the uprights or skids damaged. The main skid is birch $\frac{1}{4}$ -inch by $\frac{1}{4}$ -inch by 10 inches. It is steamed and given a slight curve at the front end. The center of a $\frac{1}{4}$ -inch spruce axle 8 inches long, the upright, and the end of this skid meet at the same point. The rear upright is spruce $\frac{1}{4}$ inch by $\frac{3}{8}$ inches, shaped to a streamline form as shown (exaggerated in size) at E. This is attached to the motor base at a point 8 inches back from the front end. The forward upright previously described. It is then attached to the skid, the diagonal brace is tied and glued in place, and the front landing gear is complete except for the wheels. These should be miniature pneumatic tired wheels, 2 inches in diameter. The rear skid is birch $1/16$ inch by $\frac{1}{4}$ inch, slightly curved. It should be shod with wire, as shown at D, to lessen the resistance when the model is running on the ground.

The main planes are built up in the usual way. The spars are $\frac{1}{4}$ -inch by $\frac{1}{4}$ -inch birch. The ribs are $\frac{1}{8}$ -inch square spruce, tied and glued to the main spars. The planes are 8 inches in depth at the center and taper to 6 inches at the ends. The spread of each is 18 inches. They are attached to the motor base by a joint, as shown at A. They may be wired horizontally or at a slight dihedral angle. In order to facilitate changes in the wiring, the various wires should be attached as shown at C. A wire hook is first bound on the main spar. A small copper washer is slipped over this and the wire is run through the washer. This permits ready adjustment and is the best possible substitute for a turnbuckle.

There are no moveable rudders. The rear tail, or empennage, is composed entirely of stationary members. The upright on which the skid is placed is a piece of $\frac{1}{4}$ -inch round wood. It is run through a hole bored in the motor stick and is held in place by glue and small screws. It is 9 inches long. Four inches should be left on the top and $4\frac{1}{2}$ inch on the bottom of the motor base.

The horizontal tail is built up as follows: a cross-piece of spruce $\frac{1}{4}$ -inch square and 16 inches long is tied and glued, at its center, to the rear of the motor stick. Two other pieces of the same size wood are lashed to the motor base at a point 10 inches from the rear. They are then spread apart at the opposite ends and are tied to the ends of the cross-piece. Two pieces are then lashed together in the form of an X. This is tied to the base with its center at the upright, and the ends at the curved side pieces. Thin wire is stretched around the rear end to stitch the cloth on.

The vertical tail is formed by wire stretched from the front of the horizontal tail, to the bottom of the upright, and from the top and bottom of the upright to the horizontal wire. This is all shown in the drawing.

All planes should be covered with varnished silk which may be glued or stitched on the frames.

The propeller is 12 inches D, 20-inch pitch. If possible use a laminated propeller and ball bearing shaft. It is surprising how much a ball bearing will reduce the friction. On such a small surface it would at first appear negligible, but the writer knows of instances where the propeller speed has been increased 40 per cent by the substitution of a ball

Continued on Page 347.

50-H. P. Gnome Motors

30-H. P. Anzani Motors

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SITUATIONS WANTED.

AVIATOR—Well-known aviator licensed by the Aero Club of France, experienced mechanic, seeks engagement; can handle Bleriot monoplane, Farman and Curtiss biplanes. Made numerous flights in America. Address Aviator, care S. O. Pollock, 320 Broadway, New York City.

AVIATOR—Situation as aviator; one year's experience; can design and build. Box 174, care Aero, St. Louis.

AVIATOR—Wishes position flying Wright machine. Best of references. Address Box 215, care Aero, St. Louis.

AVIATOR—Young man who has had some experience with biplanes wishes to obtain situation as aviator; will work for \$30 weekly on a year contract if employer pays cost of obtaining pilot's license. Address Box 210, care Aero, St. Louis.

INSTRUCTOR—Ladis Lewkowicz, lately manager and chief instructor of the Queen Aeroplane Company, is open for proposition from first-class firms or individual to organize and manage aviation school and aeroplane factory. Write to Ladis Lewkowicz, 102 West 64th St., New York, N. Y.

MECHANIC—Position wanted in aeroplane factory by young man, 19, who is ambitious of becoming a professional aviator. Box 214, care Aero, St. Louis.

PRESS AGENT—Newspaper man experienced in aviation would like to arrange to write press notices for one or more aviators; terms, \$50 monthly. Address Box 211, care Aero.

MISCELLANEOUS WANTS.

AERO, VOL. I, NO. 2.—Wanted this number of Aero; will buy as many as 10 copies if the price is right. Make best offer; do not send copy until offer accepted. Address Box 209, care Aero, St. Louis.

AEROPLANE—Want to purchase or lease Wright biplane that has not been used longer than three months. Address Box 218, care Aero, St. Louis.

AVIATORS—Wanted aviators to test their planes in Sacramento with Maxim rotary motors. Buildings, large flying field, 45-horsepower motor free of charge for these trials. We want endurance flying with these motors. You pay your personal expenses. Address Maxim Rotary Motors, 1530 M., Sacramento, Cal.

FOR SALE.

AIRCRAFT SUPPLIES—Aeroplanes for sale and built to order; propellers, models and model stock; Chicago engines;

flying models. Chicago Aero Works, H. S. Renton, Prop., 164 Wabash Ave., Chicago, Ill.

AUTOMOBILE—For sale or trade. Hudson 20, late 1910 model, fully equipped, extra tires, tubes and so forth; hasn't been run 1,200 miles. Will trade for Gnome engine. George Kame, Alliance, Ohio.

ENGINE—For sale 60-horsepower Elbridge engine, magneto, radiator and propeller, never been used. \$600 complete. Box 203, care Aero, St. Louis.

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(Continued from page 345)

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DOMINGUEZ MEET WAS REALLY A CIRCUS

By a STAFF CORRESPONDENT

SPECTATORS CAME IN LARGE AND ENTHUSIASTIC NUMBERS—OPENING DAY CROWD

Los Angeles, Cal., January 24.—A veritable hippodrome of the upper atmosphere, a circus in the air, is the result of the efforts of the managers of the People's Aviation Meet, now in progress here. As with the established three-ring circus of today with its many marvelous feats of skill, its dare-devil performers and clowns touching every phase of human sentiment, even at times on the tragic, so it is with the present aviation meet.

L. Beachey and P. O. Parmelee, with their thrilling glides and figure-eights, furnish the sensations. Various birdmen from all parts of the country engage in speed and endurance contests. Aerial weddings and women aviators furnish the spectacular and even the humorous is represented in some of the types of original machines which their pilots endeavor to get off the ground at Dominguez Field.

From the standpoint of the pleasure-loving public the Third International Aviation Meet at Los Angeles will long remain a pleasant memory. It is possible that at no other recent meet has the average ticket holder received as much for his money as during the first five days of the present gathering of birdmen. What the aviators will reap from the session remains to be seen, but it is highly probable that their rewards will be substantial and quite certainly if the present fair weather continues the remainder of the week.

The crowd on Saturday, the opening day, was larger than on the first day of the first meet three years ago, and that on

Sunday, the day following, is declared to be the largest ever gathered in a single enclosure in the Angel City. Monday proved to be a record Monday in the matter of attendance and with the approach of the end of the week the daily receipts are steadily mounting upwards.

The fact that the compensation of the participants in the present meet depends on the attendance and consequent receipts is responsible for the element of uncertainty in the case of the aviators. According to the original agreement which is still in force, the aviators receive 55 per cent of the net proceeds after the first \$10,000 and their initial expenses have been deducted. Up to last night this left something like \$4,000 to be divided with a clear field for the percentage for the succeeding days of the meet. Today was payday and the aviators received their initial expense money, those from a distance receiving as high as \$500 for each machine.

Saturday's program was an ideal one and left nothing to be desired in the way of entertainment. Parmelee and Beachey began a keen competition, each to outdo the other. Most of their endeavor has been centered on the figure eight and they have been cutting down the time in covering the 300-foot course until Parmelee has established the record of one minute, 3 2-5 seconds for the five laps. It is freely predicted that Beachey will lower this on the first day that the wind dies down.

Weldon B. Cooke, recently qualified as a professional pilot, and Farnum Fish, an eighteen-year-old amateur, have done nearly all of the daily endurance, the former remaining in the air practically all of the time allotted to the afternoon program. William Hoff, formerly chief mechanic to the late Eugene Ely, and a recent graduate of the Curtiss school,

Three hundred feet between diameters. Time given is for five complete figures.

International race, five laps of 1 1/4 mile course: L. Beachey, 6:45 3-5; W. Hoff, 7:35 2-5; H. Beachey, 8:29.

Five mile handicap: H. Beachey, 9:22 3-5, less handicap of 2:26 2-5, corrected time, 6:56 1-5; G. Martin, 7:47 3-5, less handicap of 46 2-5, corrected time, 7:01 1-5; Hoff, 7:25 1-5, less handicap of :08, corrected time, 7:17 1-5; Kearney, 8:05 3-5, less handicap of :26 1-5, corrected time, 7:39 2-5; Beachey, 6:33 4-5, was 10.7 per cent under test time, disqualified; Parmelee, 7:58 4-5, was 9.7 per cent under test time, disqualified.

Hunting in aeroplane: Fish in Wright biplane, 9:10.

Women aviators: Blanche Scott, 12:25.

Free-for-all, five laps, 1 1/4 mile course: L. Beachey, 6:48; Hoff, 7:24 3-5; Martin, 7:27 4-5; Kearney, 7:37 4-5; Parmelee, 7:58.

Fish carried a passenger during the entire time he was in the air in the afternoon, saying: "When I go up I like to have somebody to talk to." Fish carries passengers as a matter of course and not as a special stunt. He is as matter of fact about it as if driving an automobile.

WEDNESDAY, JANUARY 24.

Ten thousand people were present when the afternoon opened with the wind very bad on the ground. George Harrison, as *commissionaire sportif*, appeared and prohibited the aviators leaving the field. Dick Ferris took exception to this and declared that the question of flying should be left to the aviators. Harrison declared that he would not officiate as starter until the wind died down and left the field. Glenn Curtiss, who was present, ventured the opinion that the air was bad, but that the more experienced men would have no difficulty. In spite of the various comments on the subject most of the aviators appeared for work. Gill was placing a Hall-Scott in his biplane and will not be ready for work for a day or two.

L. Beachey commenced the afternoon by essaying one of his characteristic stunts. He rose to an altitude of about a mile, shut off his motor and volplaned to earth with the ease of a bird. The figure eight was declared off on account of the wind.

Amateur duration: Callan, 1 minute, 45 seconds.

Daily altitude: Parmelee, 7725 feet; L. Beachey, 5000 feet; Glenn Martin, 4950 feet.

Daily duration: L. Beachey, 1:23:28; Fish 1:14:26; Parmelee, 1:07:48; Martin, 50:36; Weldon Cooke, 41:15; Turpin, 32:09; Kearney, 23:10; H. Beachey, 18:30; Stites, 8:20.

Mail carrying: Turpin, 10:29.

Five-lap handicap: Parmelee, 7:43; Martin, 7:43; Kearney, 8:44 3-5; L. Beachey's engine stopped during the second lap. Hillary Beachey's engine stopped just before the finish.

Handicap race freak: Man won, horse second, aeroplane (Glenn Martin) third, motorcycle fourth, automobile fifth.

International race, five laps: L. Beachey, 6:4 3-5 seconds; Kearney, 7:44 3-5 seconds; Turpin and H. Beachey did not finish.

Five mile free for all: L. Beachey, 6:55 3-5; Martin, 7:53 3-5; Parmelee, 8:42 2-5.

Pigeon shoot: Turpin in Wright.

A deplorable incident in the management of the present meet is the absence of dependable barographs with which to record the altitude flights. The original Hoxsey barograph is in good condition and up to the present has been the only one that the representatives of the F. A. I. would certify to. Pocket barographs have been used up to 3,500 feet with indifferent results. One barograph from a New York club arrived in so badly wrecked a condition as to be useless. Another reported to be on the way has not arrived.

The question as to who is responsible for the absence of the instruments is being passed from hand to hand without placing it on any particular person. Whoever is to blame, it is regrettable that in every meet held in California the barographs have either been missing, arrived too late for service, or arrived in such a condition as to be useless. It is the opinion of most of the persons concerned that the trouble is caused by the delay in ordering the instruments. Certainly New York "high brows" realize the importance of having

WILLIAM HOFF, THE BRILLIANT YOUNG CURTISS FLIER.

has come to the front in the speed events and has taken either second or third place in every event he has entered. Glenn Martin of Santa Ana, W. B. Atwater of New York, Hillary Beachey, Howard Gill, Cliff Turpin and Horace Kearney have contributed their share of the entertainment in the various special events scheduled.

The one damper on the meet was the sad fate of Rutherford Page, the New York aviator, who met his death within a few feet of the spot where Hoxsey was killed last year. While all of the participants express the profoundest regret at the sudden taking away of the promising aviator, there has apparently been no let down in their performances. To date the vital statistics of the meet can be tabulated as one death and one wedding, the latter event taking place a short time before the fatal accident to Page.

Blanche Scott has made good in all her flights, appearing for 15 minute flights on every day but one, and making right or left turns at her option without apparent difficulty. She is flying under the management of Glenn Martin of Santa Ana and uses one of his Curtiss-Martin machines with Hall-Scott power plant. She will remain on the coast for some time and will fill engagements under Martin's direction.

Following are the summaries of the past two days.

TUESDAY, JANUARY 23.

Daily duration: Cook, 2 hours, 30 minutes; Fish 1 hour, 24 minutes, 10 seconds; Parmelee, 1 hour, 3 minutes, 20 seconds; Martin, 1 hour, 1 minute, 45 seconds; L. Beachey, 1 hour, 42 minutes, 47 seconds; Kearney, 37 minutes, 22 seconds; Hoff, 22 minutes, 7 seconds; H. Beachey, 21 minutes, 22 seconds; Miss Scott, 12 minutes, 25 seconds; Willard, 11 minutes, 22 seconds; Turpin, 10 minutes, 20 seconds.

Daily altitude: Parmelee, Beachey, Cooke. Altitude not yet announced.

Mail carrying: Turpin, 10 minutes, 20 seconds.

Figure-eight: Parmelee, 1:03 3-5; L. Beachey, 1:09 4-5.

barographs on the ground and would ship promptly if requested.

Heard At Dominguez

W. B. Atwater and Mrs. Atwater have purchased two of the latest Curtiss hydros for their own use. The machines will be delivered to them at Coronado Beach at an early date.

Earl Remington, while not connected with the meet, has several machines in his permanent hangar at Dominguez Field and is contemplating taking one of his friends on a 60-mile trip.

Crawford, the Tacoma amateur, has given up trying with his Emerson motor and is installing a Hall-Scott.

Jay Gage, a local builder has a double propeller tractor drive machine of his own make equipped with a Hall-Scott and will probably appear in some of the later events of the meet. He lifted three persons besides himself, the total weight being 565 pounds, about 10 feet from the ground, yesterday, and flew with the machine for about 50 feet at a slow speed.

New pupils are arriving at the Curtiss San Diego school almost daily. Among those who have begun their training within the past few days are G. E. Underwood, of Lang, Cal;

The Page Accident Explained

By G. H. CURTISS.

Rutherford Page was simply trying something which was impossible for anyone or any machine to do. He was a very skillful young aviator—undoubtedly the most skillful of any who had ever tried for a pilot's license. He had been doing all kinds of flying daily for six weeks prior to the Los Angeles meet, and in his trial for his license he made five figure eights in seven minutes, using the same machine several pupils used in their license tests, and in which the others required from twelve to fifteen minutes to complete the five figure eights.

Page had graduated from the training school, had taken his pilot's license, under the circumstances above stated, and had purchased a machine to compete at the Los Angeles meet. He was ambitious to make a showing and had made a wonderful showing up to the time of the accident. He appeared, however, determined to excel Lincoln Beachey, probably the most skillful aviator in the world, and in his efforts to do so attempted the impossible. The officials of the Los Angeles Meet are in no wise to blame, as Page was thoroughly competent to comply with all the rules and regulations governing competition in any aviation meet ever held in this country.

I have often stated that I do not approve of spectacular stunts by aviators, simply for the purpose of earning the applause of the crowd. Unfortunately, as long as men will continue to do such things as Page attempted we shall have these deplorable accidents, just as surely as accidents result from reckless driving of automobiles at high speed. Standard makes of aeroplanes are today safer than ever before and flying is becoming safer all the time. It will continue to grow safer if the aviators will avoid reckless flying and observe ordinary caution.

GILL BADLY HURT AT NIGHT

Los Angeles, Cal., January 28 (Telegram).—Howard W. Gill, driving a Burgess-Wright biplane, made a bad landing from a height of about 200 feet in the darkness, Friday evening, January 26. The biplane was almost completely wrecked and Gill was picked up unconscious. He is resting easily tonight and has ordered his other machine assembled for flight.

When taken to the California hospital it was found that four of Gill's ribs had been broken and his spine slightly fractured. He suffered other minor injuries.

Gill was flying back to his hangar at Dominguez after alighting in a nearby field. P. O. Parmelee and Clifford Turpin, waiting for him, heard a terrific crash in the darkness and rushed to the place where the noise came from. There they found Gill under the wreck, unconscious. The skids of the biplane had been forced two feet into the ground.

It is impossible to determine the exact cause of the accident, but it is believed that a tool, left on the plane, caught under the warping wire, or that a chain in a control wire was jammed in the pulley.

EIGHTEEN-YEAR-OLD FARNUM FISH STARTING WITH PASSENGER.

William Engle, of Cleveland, O.; Frederick Hoover, Colorado Springs, Col.; Oscar A. Solberg, Davenport, Ia.; E. C. Mallick, of Philadelphia, and J. L. Callan, Albany, N. Y., a friend of Beckwith Havens, the young society aviator of the Curtiss staff. Mr. Engle has already purchased a Curtiss aeroplane and expects to use it extensively in flights during the coming summer.

Cooke Wins Total Duration Prize

St. Louis, January 30.—E. W. Roberts, of the Roberts Motor Company, who is in St. Louis today, received the following telegram in regard to the performance of the four-cylinder Roberts motor used by Welden B. Cooke at the Los Angeles meet:

"Cooke wins daily duration six days out of nine, being in air entire official time, two hours and thirty minutes these six days. Wins total duration for meet with 18 hours, five minutes, out of possible 22 hours and 30 minutes. Wins daily altitude three days and second altitude two days. Never during the meet was he compelled to come down for motor troubles. His Roberts 4-X motor is easily the sensation of the meet."

MAX AMS MOTOR ENTERED

New York, January 20.—The Max Ams Machine Company has entered an eight-cylinder four-cycle water-cooled V-type motor in the Automobile Club \$1,000 competition. Its dimensions are three 15-16-inch bore by 5½-inch stroke, giving 60-horsepower at 1100 revolutions. The inlet valves are mechanically operated and placed in head. They are actuated by rocker arms and push rods from a common cam shaft situated above crankshaft. The exhaust valves are placed at side of cylinders. Lubrication is accomplished by gear pump which forces oil through the hollow crankshaft, from which it issues in jets upon the connecting rods. The cylinders cast separately and are provided with aluminum water jackets, two magnetos and two carburetors. The cylinders are arranged so that each of two halves is complete motor in itself, and can operate independently.

TWO MORE LICENSES GRANTED

New York, January 20.—Aviators' licenses have been granted to Hilary Beachey of St. Louis and Lieut. J. W. McClaskey, U. S. M. C., retired, chief instructor at the Curtiss Aviation school at San Diego, Cal. Ninety aviators have now received licenses in this country.

TAFT ENDORSES AVIATION

New York, January 28.—Despite the fact that his introduction to the 250 members of the Aero Club of America, many of whom were members of the Aeronautical Society, was not considered in very good form and, in spite of the fact that the toastmaster's introductory remarks were hardly what one would have expected, President Taft responded with good grace at the annual Aero Club of America dinner, at Sherry's last night. He showed his favor towards aviation in the following brief address:

My first thought when I entered this room was, How many of you really live in the air? There ought to be some method of distinguishing those who really fly and those who only want to fly. Members of the former class might have little wings attached to them.

I am in entire sympathy with your chairman in his views on the penuriousness of Congress. I don't think that all the blame can be put on the lower house. My interest in aviation is absolutely non-political. Your science has advanced to such an extent that a substantial appropriation would be justified for the purpose of testing and experimenting to see what really can be done in the air, both with those machines that have already flown and with any new invention that may be made.

As to the treasury of the United States, all of us have come to the conclusion that its funds may be properly used for the general welfare. Democrats and Republicans and the members of other parties now agree that there are many things that ought to be investigated by the Government, and that the cost of the investigation should be borne by the United States treasury, because the United States treasury is better able to do so than any other treasury in the country. The Government could certainly find an excuse for becoming interested in aeroplanes because of the use they will undoubtedly be to the Army, Navy and Postal Department.

I have no doubt that the time is coming when the aeroplane will figure in the transportation of the fast mail. The possibilities of the aeroplane are obvious to everyone of us whose bones are hollow and whose avoirdupois is not too great. My interest in flying is obviously free from anything personal or selfish.

We are in friendly rivalry with France in many things, and it is perhaps not pleasing to note that she is outstripping us in the number of her aviators and in the support she is getting from the Government.

I will be frank in saying that I first regarded the aeroplane as a toy. That impression has faded away. The aeroplane is going to affect us as the telephone, the automobile and many other things without which we would now find life impossible. Perhaps only one-tenth of you have so far been in the air; the remainder of you are interested in the new science because you believe in the possibilities of the new science. That so many of you are here seems to prove that there is a future for aviation. I believe in that future—and I think that any encouragement or quasi-official recognition that my presence here may give is quite in order.

I hope that you may go on making higher and higher flights, and that you may hasten the day when we shall all be able to help in that movement through the air that all of us feel must be so enjoyable.

The Collier trophy, a group in bronze by E. W. Keyser, was awarded to G. H. Curtiss for the greatest achievement in aviation in 1911—the hydroaeroplane. In the absence of Curtiss, E. D. Moore, of the Curtiss forces, received the trophy.

Cal P. Rodgers was given a gold medal in appreciation of his Atlantic-to-Pacific coast flight. He afterwards said that the inscription was not exactly correct.

Because the banquet was not the sort of an affair from the gastronomical viewpoint that everybody expected Louis Sherry to provide at \$10 a plate, there was a general rush to get away after the final speech—and even before. Today, Sunday, at the Madison avenue clubhouse, the failure of the dinner in that respect was one of the chief topics of discussion.

Among those who sat at the speaker's table during the evening were:

President Taft, J. Jules Jusserand, French ambassador; John Hays Hammond, Wilbur Wright, Rear Admiral Robert E. Peary, U. S. N.; Brigadier General James Allen, U. S. A.; Captain Washington I. Chambers, U. S. N.; Clarence H. Mac-

kay, Charles Dana Gitson, Calbraith P. Rodgers, Claude Grahame-White, Prof. Willis L. Moore; J. C. Montgomery, William Travers Jerome and James A. Blair, Jr.

"ISLES OF SAFETY" FAVORED

New York, January 20.—Recently John E. Sloane, president of the Sloane Aeroplane Company, wrote to Mayor Gaynor and Park Commissioner Stover requesting that the city provide landing places for aviators in case of emergency. On Thursday the commissioner gave a public hearing on the matter. Among those present were Henry A. Wise Wood, a vice-president of the Aero Club of America; A. Leo Stevens, A. W. Lawson, E. L. Jones, H. B. Sherman, Thomas A. Hill, acting president of the Aeronautical Society, Harry B. Wise and Ladis Lewkowicz. With the exception of Wood, all favored the Sloane proposal.

Sloane told the park commissioner that the coming season would see a great deal of aviation. As many as 15 fliers had already gone over New York. In the cross-country flights that would be made to and from the Long Island aerodromes, aviators would sometimes be blown off their course and forced to fly over the city. It was the duty of the city, he thought, to supply isles of safety, both for the protection of the aviator and the public. At these landing places sheds might be erected for supplies and spare parts.

Lewkowicz, who flew over New York last summer in a Blériot, informed the commissioner that he ran out of gasoline when directly over the city. He looked below for a landing spot, but could not find one. Fortunately, he was at a great height and was able to volplane over the Hudson river and come down in the Hackensack meadow. Stover wanted to know whether an aviator could discern from aloft a small space like Jasper Oval, one of the spots suggested by Mr. Sloane for an isle of safety. Lewkowicz suggested that the field be painted white.

Wise Wood swatted the isle of safety proposition, saying: "The Aero Club of America seeks to encourage aviation, and we deprecate flying over cities. Over-city flights are discouraged in England, France and Germany. Nothing should be done to encourage flying over New York; everything should be done to prevent it."

The commissioners didn't like the idea of erecting hangars in the parks, and said so. Stover suggested to the aviators that they lay a definite proposition before the board and it would be considered. The meeting was adjourned.

Hudson Maxim, Claude Grahame-White and Charles K. Hamiton wrote letters approving of the Sloane proposal.

Park Commissioner Stover is willing to hear more arguments for and against the proposition of John E. Sloane that the city provide landing places for aviators in the public parks. The opposition to the scheme, however, is growing. S. H. Moore of the Curtiss Aeroplane Company, and W. Redmond Cross, the banker-aviator, declare that the location of landing places within the city is an implied invitation for aviators to fly there. Aviators, for the time being, at any rate, they hold, should be discouraged from flying over cities and towns.

A. C. A. SECRETARY MAY RESIGN

New York, January 28.—It is common talk around the Madison Avenue clubhouse that the newly enlarged board of governors is neither as effective nor as harmonious as it sounds in print. It is rumored that certain dissensions have made the position of secretary of the club well-nigh intolerable and that Charles Walsh, who holds this office, has tendered his resignation to the board.

Any one who has followed aeronautics in this country for the past five or six years knows that Walsh is eminently qualified for a position where sincerity, honesty and business skill are requirements. Learning ballooning in France in 1906, he was the first aeronaut to take up officers of the United States Army. He is well known now as an aeronautic pilot and has many friends among prominent practical men who have the best interests of aviation at heart.

There is no doubt that if he leaves his desk on Madison avenue that the club will suffer a loss.

J. N. Froberg, of Richmond, Cal., is completing a composite type biplane and will install a six-cylinder Roberts motor.

HOW TO DESIGN A MODERN AEROPLANE*

By E. R. ARMSTRONG

In the preceeding discussion it has been shown how to determine the correct outline, cross section and area of the supporting surface necessary for any given design, and calculate the net power at any reasonable speed.

It is readily apparent that in as much as the center of pressure of any aero-curve surface varies with the angle of attack, as shown in Fig. 13 and 14, it is necessary to have some corrective influence to maintain stable flight, it being impossible to maintain the angle of flight constant in amount. To preserve the balance of any aeroplane it is necessary to provide means of controlling the fore and aft stability, steering either to the right or left, and lateral balance of the machine as a whole. Fore and aft stability is usually controlled by the elevator, steering is by verticle rudder, and lateral balance by ailerons or wing warping.

The area, shape and location of the necessary surfaces for the complete control of the aeroplane will now be considered.

In the past there has been great variation in the different aeroplanes, in the design and location of these members, but when the very latest machines are compared there is a great uniformity in these parts, which will permit of the use of formulae based on these machines. The dimensions of practically every successful machine in the world has been compared in the preparation of these formulae and while it might be possible to treat the design of control areas from a mathematical standpoint, the theory of any subject must ever follow the practice of it, so it is more desirable and practicable to base all rules on the present-day standards, as shown in the very latest designs. While the reasons for the sizes and shapes of these areas may be somewhat obscure, there can be no question that the use of these formulae in actual construction will give results in perfect accord with the foremost practice of the leading designers.

The function of the elevator on an aeroplane is primarily to maintain the flight path horizontal, or permit the machine to climb or descend at the will of the aviator. Even on a calm day the air is in constant motion and, as it has been shown in Fig. 14, the center of pressure in an aeroplane surface may change as much as 40 per cent for a change in the angle of incidence of only five degrees. It is readily seen that a change of five degrees downward in the direction of a wind current would immediately disturb the equilibrium of an aeroplane, unless means were taken to correct the angle of attack of the planes to compensate for the downward trend of the wind.

The elevator is also called upon to correct any error made in placing the propeller in the center of the head resistance. Many constructors have in the past thrown extra duty on the elevator on account of the bad location of the propeller. It is deemed advisable to give an example of the method used in determining the size of the elevator and show also the importance of the right location of the propeller.

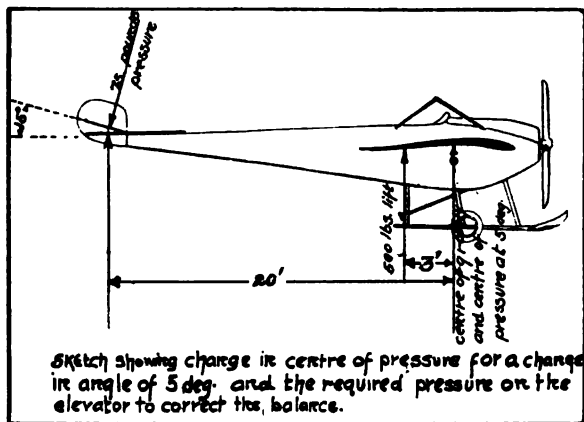


Fig. 18.

Fig. 18 illustrates one of the most successful mono-planes, embodying as it does in a greater degree than any other, the essentials of an efficient aeroplane—minimum head resistance, streamline form of body and of exposed

struts, efficient plane surfaces, and control areas of such size and location that have proved to be most effective in practice.

For simplicity in this calculation which is only illustrative of the underlying principles, it is assumed that the supporting surface is of the type shown in Figs. 14 and 15; that the total weight of the machine is 1,000 pounds and the angle of attack is five degrees. It is also assumed that the location of the propeller axis is such that the head resistance is equally disposed on either side of it, so that the machine will have no tendency to rotate in a vertical plane about its center of gravity, as would happen in an aeroplane of the Demoiselle type. When the propeller is located above the center of resistance, the action of the air currents on the exposed areas below the propeller being much greater than that above, there is a constant tendency for the machine to rotate around the center of gravity, and this tendency must be corrected by the elevator, thus owing to incorrect design adding permanently to the head resistance.

It is important in a machine of the non-lifting tail type that the center of gravity should be in the center line of the machine laterally, and slightly under the center of pressure of the wing longitudinally. The axis of the propeller should be located at such a height as to be at the point of balance of the head resistance and horizontal when the aeroplane is at the designed angle of flight.

To further simplify matters, it is also assumed that the breadth of the wing is 10 feet, and that the center of gravity is located at the center of pressure for the normal angle of flight, or four feet back from leading edge. The speed of flight is assumed to be 50 miles per hour.

By the inspection of Fig. 14 it is seen that at an angle of five degrees the center of pressure is 40 per cent from the leading edge of the plane, or in the case considered four feet from the edge of the wing. A further inspection of Fig. 14 shows that at an angle of 12 degrees the center of pressure is as near the leading edge as it ever gets for any positive angle, being in fact about 30 per cent of the total width of the plane from the leading edge, or for the wing considered three feet.

At zero angle the center of pressure has moved backward until it is 70 per cent of the width of the plane away from the leading edge, or for the case considered, seven feet. Now the normal balance is four feet from the leading edge, and under certain conditions it is seen that the point of balance may move one foot farther forward and three feet farther back. As an elevator of sufficient area to correct the balance of the three feet change in the center of pressure is necessary, it will now be shown what is the magnitude of the force necessary to correct this change in the center of pressure. Fig. 15 shows that at zero angle the lift of the type of wing adopted is somewhat in excess of half of the lift obtained at five degrees of angle. As the center of gravity of the machine has not changed by the change of angle, there would be an upward pressure of about 500 pounds concentrated at a point three feet back of the center of gravity. Now, 500 pounds acting on the end of a three-foot lever will exert a turning moment of 1,500 foot pounds. The elevator has to be of sufficient size to produce at least this amount of reaction when placed at the most effective angle, and at the distance from the center of gravity called for by the design. As an elevating surface is required to work at both positive and negative angles, it is almost the universal custom to use a flat surface for the elevator. (It might be well to remark here that control areas could be much more efficient and effective if they were cambered surfaces instead of plane areas.) Fig. 12 shows that there is no object in giving a greater angle than 15 degrees to flat elevator surfaces, as at that angle the maximum lift is attained.

At 50 miles per hour the lift of one square foot of flat area with a length to breadth ratio of six to one, is about five pounds, as shown by Fig. 15 and Fig. 16. The distance from the center of gravity of the machine to the center of pressure of the elevator plane is assumed to be 20 feet. Now, one square foot of elevator area lifting five pounds would give a turning tendency of 20 times five at a distance of 20 feet from the center of gravity, or 100 foot pounds. To

correct the want of balance of 1,500 foot pounds as previously calculated, at least 15 square feet of elevator surface would be necessary.

Many of the assumptions of the above problem are not strictly true, and it is owing to the impracticability not to say impossibility of obtaining mathematical results in a simple way, that the "rule of thumb" method of calculating these control surfaces is adopted.

In passing it is well to call attention again to the fact that "it is not only inefficient, but harmful, to allow flat control areas, be they elevators, rudders or ailerons, to have a greater angle of movement than 15 degrees in either direction. A greater angle only sets up a drag on the area considered." This fact will account for many of the bad accidents that have happened to Farman-type machines, controlled laterally by ailerons. There being nothing to prevent a greater angle than 15 degrees of the ailerons, some pilots have unwittingly increased it to as much as 45 degrees, at which point Fig. 12 shows the lift to be somewhat less than at 15 degrees, and the drift increased over three times, making the ailerons act as a brake which would tend to slow down that side of the machine already the lowest. Such decrease in speed giving less and less support, until the control of the machine is lost.

The fixed area usually found in front of the elevators of the modern aeroplane, is called the stabilizer or tail. Its purpose is to act as a directive influence to maintain the aeroplane at its desired angle of flight, like the feathering on an arrow. The front elevator has all but been abandoned in the up-to-date machines and will not be considered here. In Fig. 19 and Fig. 20 is given in diagrammatic form the correct relationship of the different control areas. Fig. 19 shows the proportions for monoplanes and Fig. 20 those applicable to biplanes.

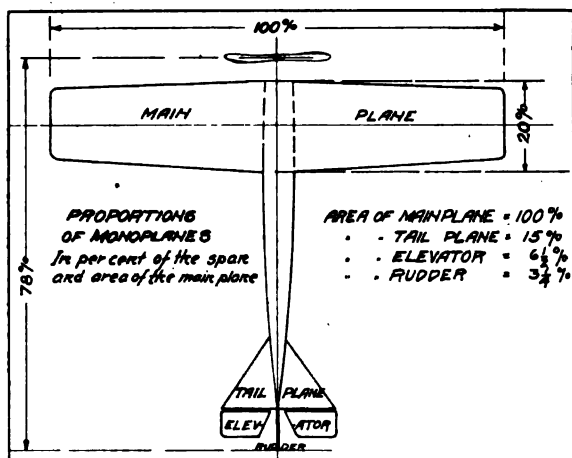


Fig. 19.

The shapes shown in Fig. 19 and Fig. 20 are composites of the forms of these areas on the different standard machines, and shows generally the shape that has been found to be the most efficient. These figures also give the length over all in per cent of the span, and the chord or width of the wing in per cent of the span. If the width of span of a given design is assumed, the length over all must be 78 per cent of that amount, and the chord 20 per cent of the same in order that the design may be according to standard practice.

After these proportions are determined, the area of the main planes is calculated. By inspecting Fig. 19 it is seen that the area of the tail plane is 15 per cent, elevator area six and one-half per cent, and rudder area three and one-quarter per cent of the area of the main planes. In a general way it might be stated that any given monoplane would be effectively controlled if the tail or stabilizer area is 15 per cent of the main plane area, elevators one-half the area of tail plane and rudder one-half of the area of the elevators.

The results shown for biplanes in Fig. 20 are to be applied in the same way as illustrated for monoplanes, with the exception that the ailerons area is given only for biplanes, as it is almost the universal practice to maintain the lateral balance of monoplane by wing warping. This system of balance is also used to a great extent by biplane designers, but the

use of the aileron is still quite common. If provision is made in the control lever connection to prevent a greater angle of attack than 15 degrees, the aileron will prove to be very efficient. A greater angle of attack only creates useless head resistance.

In connection with the use of wing warping it is well to bear in mind that the camber of the flexed wing will not at any time increase to a greater amount than to one in seven. At its maximum the wing movement should not be greater than that necessary to increase the angle of attack to 20 de-

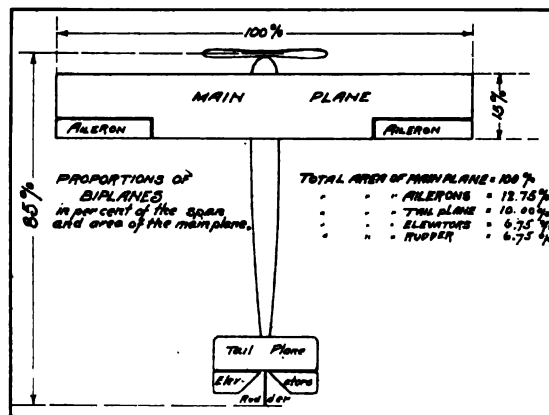


Fig. 20.

grees. As has been shown in Fig. 12, this is the angle of greatest lift, any further increase in angle not only decreases the lift, but increases the head resistance.

The average length to breadth ratio of the fixed tail plane on a biplane is three to one. On the monoplane it is two to one, with the general arrangement shown in Fig. 19 and Fig. 20.

The biplane illustrated is of the tractor screw type, as more than 90 per cent of the designs now in use are of that type. The ratios can also be applied to the older type of biplane with the propeller at the trailing edge of the main planes.

To be continued next week.

HAS SELF-STARTER FOR MOTORS

New York, January 26.—Frank Coffyn, formerly a Wright aviator, has a motor-starting device for his hydroaeroplane. Coffyn says he made eight successful trips over Lake St. Clair, Detroit, Mich., using this new attachment, and he is satisfied with its efficiency. The engine may be stopped and restarted from the seat while the machine is on water or land.

Coffyn used the biplane of Russell A. Alger, of Detroit, for his experiments. The apparatus has been submitted to the Wright brothers, and it is probable they may adopt it for use in their machines. Coffyn has been invited to explain his invention at the dinner of the Aero Club of America on January 27. Coffyn says the device is attached to the flywheel, which is made with teeth to fit into another gear operated from a shaft. This shaft runs forward to a position alongside the pilot's seat and at the extreme front end of the shaft is the handle of the starter. The contrivance weighs nine pounds.

\$10,000 LIBERTY PRIZE PAID

New York, January 27.—The dispute over the award in the Statue of Liberty race during the Belmont Park meet in 1910, has, at last, been closed. On Thursday Claude Grahame-White received the check for \$10,000. The prize was first awarded to the late John B. Moisant. Grahame-White protested to the International Aeronautic Federation and the decision was given to Count de Lesseps. The Englishman again appealed and the second time won.

Robert Nolker, president of the Aero Club of St. Louis, who sailed for Hamburg recently on the Amerika, sent AERO the following wireless message on January 12: "Hugh Robinson and Jerome Fancullin on board steamer with two Curtiss machines to exhibit before the German and French governments. Will be in Paris two weeks."

CORRESPONDENCE

[1012] A. B., Saginaw—For horizontal flight the center of pressure and the center of gravity must coincide in any type of aeroplane and within limits this may be brought about by the action of the controls. Locating the center of pressure with regard to the center of gravity depends entirely on the individual design of each machine, and no general rule other than the above can be given. The pilot's seat is usually located as near the center of gravity of the machine as the general design will permit in single-seat machines, so that the inertia effect of his weight will have the least action on the balancing of the machine. We will have an article dealing with this feature of designing in the near future.

[1013] J. A. H., San Francisco—It is better to locate the elevator at the level of the main planes rather than below, so that its action will not be affected by the downward stream of air from the main planes.

Mass. A helicopter having a supporting plane, a plurality of open-ended tubular members, diaphragms or plates between said members, and propeller blades to draw air through the members to lessen the atmospheric pressure on said plates and increase the pressure below the plane.

[1037] F. K. H., Butte, Montana—To compete for the Gould prize, a full-sized machine must be used in actual competition with one or more machines. A monoplane that is both headless and tailless should have the center of gravity at the center of pressure when the machine is at its normal angle of flight.

[1038] A. R., St. Louis, Mo.—The Santos-Dumont Demoiselle was fitted with a two-cylinder Darracq motor. As no American aviator has ever succeeded in successfully flying the Demoiselle, we do not know of any American motor that has been used successfully in the Demoiselle.

[1039] J. J. H., Lyndhurst, N. J.—A 30-horsepower motor will not give sufficient power to fly your Curtiss-type as a hydroaeroplane. It requires considerably more power to fly from water than from land. A single pontoon would give sufficient support if it were two feet wide, one foot deep and 12 feet long.

[1040] C. G. H., Dorchester, Mass.—It would be practically impossible to obtain a loan from wealthy men of national prominence to buy an aeroplane.

[1042] G. W. M., St. Louis, Mo.—The best woods for aeroplane construction are spruce and ash.

[1044] T. L. F., Waverly, Ill.—For equal strength a strut made from aluminum would be about six times heavier than one of ash. Litigation about the Wright patents is still pending in France.

[1045] E. L. M., Syracuse, N. Y.—The Demoiselle monoplane is not suitable for exhibition work; it is too hard to control.

BEATTY DOES GOOD WORK

Nassau Boulevard Aerodrome, Long Island, January 20.—George W. Beatty in a Burgess-Wright biplane made a new American passenger-carrying duration record here this afternoon. Beatty took up three passengers and remained in the air 10 minutes. As two of the passengers were under weight, Beatty's record cannot be made official.

The young New York aviator has been very busy here all week thinking out stunts. Today he invited Dr. A. G. Belden, Herbert Pratt and Jack Findlay to take a trip with him. Naturally with the unusual load the aeroplane did not lift very easily, but once off the ground the aviator had no difficulty in controlling his machine. Four circles of the field were made by the aviator. The height of 500 feet was attained. It was on this field that Lieut. de Witt Milling, on September 26, in a Burgess-Wright, broke the world's duration record for two passengers by remaining up one hour, 54 minutes and 42 3-5 seconds.

On Wednesday Beatty started off to make a flight to New York City, about 15 miles away. His intention was to make a landing in Central Park. Beatty flew over New Hyde Park, Queens and Jamaica, but was forced, owing to his gasoline running out, to make a landing at the Sage Foundation Homes Company's settlement at Forest Hills. Beatty, by the time he got back, had flown about 180 miles. He was actually in the air three hours and a half. The highest the barograph

read was 3,000 feet.

Billy Fair, of the Mineola Aero Specialty Company, has been the recipient of many congratulations on the success of his latest biplane, which is called an "Improved Curtiss-type," fitted with a six-cylinder Maximotor. Oliver B. Sherwood made the trial trip in the machine. Sherwood was very pleased with the behavior of the Fair aeroplane, which developed a speed of something around 60 miles an hour. Fair, who designed the biplane, built it to the order of John Gammer of Akron, Ohio.

George Boyd, who has a Curtiss-type machine, has been making a number of long jumps during the week.

HON. TIMOTHY WOODRUFF.

PREPARING FOR SPRING AT NASSAU

New York, January 19.—Gov. Timothy L. Woodruff, the moving spirit of the Nassau Aviation Corporation, which controls the leases of the aviation field at Nassau Boulevard, has stated that plans are under way for the season of 1912, which will probably make the field a very profitable place for aviators to locate.

The field, the grandstand, the pylons, fences, etc., which were erected for the meet of September 23 to October 1, 1911, have been kept up in first-class condition, the parking space for automobiles has been enlarged, and the 31 hangars are in excellent shape.

The plan outlined is to divide 50 per cent of the gate receipts among the aviators, the division to be made upon the comparative merit of each aviator's performance. One point will be allowed each aviator for each minute of flight, and the total number of points made by all the aviators each afternoon, divided by the number of points made by each individual aviator, will give each aviator's share of gate receipts.

The Nassau field is within a short automobile distance from New York, and indications point to the fact that the flying field will be one of the attractions of the town, affording a pleasant afternoon run to many of the thousands of automobilists of New York, and attracting many other spectators down by train. It is probable that the field will become an institution that no stranger visiting New York will fail to visit.

E. PERCY NOEL, Founder-Editor

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The Editor is pleased to consider MS and photographs for publication, but only material that is likely to prove of interest to the readers of AERO. The Editor cannot undertake to answer technical inquiries except in the columns of AERO.

IN DANGER

The dinner at Sherry's, Saturday night, was not exactly a success. The attendance was large, the list of speakers and honored guests notable—all the elements without the fortunate issue. President Taft showed his interest and favor, but he would have been a narrow president if he had not. Clever men said clever things, the "high brows" graciously patting themselves on that susceptible spot between the shoulder-blades, but there really was nothing new or inspiring said during the evening.

When he arose, President Taft said that he wondered how many of the men present really lived in the air. Perhaps he was too polite to say, "have ever been in the air." The constituent that had not been was civilly bored by most of the speeches; the contingent that had been, talked through them in undertones.

It was not an inspiring occasion.

This is unfortunate. The writer and many other members of the Aero Club of America realize that the dinner did not strengthen the organization. Yet all hesitate to place the blame on anyone, for certainly an effort that involved a tremendous amount of work was made to make the affair a success.

No doubt it will all be remembered when the next annual dinner is planned, and some who attended this year may stay away, but it should not be cherished bitterly against the club.

The larger things that were expected at the dinner did not develop. The club is not in a better position than it was before the dinner, of that there is no doubt; but there is still a chance for it to redeem itself.

The points that concern all who are vitally interested in aviation in America are:

Will the aero show at Grand Central Palace, and the international aviation cup race be licensed under a not yet adjudicated patent?

Will the profits of the aero show go to the Aero Club of America or to exhibitors who make it up?

If the first is done, the time to be spent in further litigation about this patent may be augmented, which even the plaintiffs in the case do not desire, much less the embryo aviation industry. Certainly it would be as unfair as it was at Belmont Park last year.

In the second matter it is self-evident, if an American exhibitor is required to pay for space in which to stage the exhibits that would make the show a success and then not be allowed a *pro rata* rebate according to the profits accruing to the club, that they will not exhibit. If the American industry is not represented, the show will not be worthy of an American club of national profession.

It is inconceivable that anyone with respect for aero history, with any national pride, should wish to see the Aero Club of America again disgraced.

Sincerely we hope it will not be.

AMONG THE AVIATORS

F. K. Belcher, a young mechanical engineer of New York, is one of George Beatty's enthusiastic pupils.

Hotel Clarendon, Sea Breeze, Fla., has decided to build hangars on Daytona beach, near the hotel, to rent to aviators. Daytona beach is said to be an ideal runway and alighting place.

Richard Nygren, who last year was an assistant of Nels J. Nelson, is to fly next season in a Curtiss-type machine.

Keane K. Keane has completed a hydroaeroplane, in which the aviator sits behind the engine, and announces that he is to do some flying next season on Lake Michigan.

Nels J. Nelson is to fly a hydroaeroplane next season, continuing under the management of the Mills Aviators.

Patrick Grant, Harvard athlete, son of Judge Robert Grant of the Probate Court of Suffolk County, Mass., and famous as the all-America football centre for 1908, is going in for aviation. He is at Palm Beach, Florida, at present. Before leaving Boston, his home, he arranged with Phillips Ward Page, the Burgess flyer, who was in Harvard with him, to take a course of instruction at the beach. W. Starling Burgess, of Marblehead, Mass., has established a training school at the beach, and is preparing to send Page there just as soon as it is finished. A number of Boston and New York society leaders have arranged to take up aviation and several of the men have contracted for a full course of instruction at the beach.

One night last week the following aviators were seen at the automobile show at Madison Square Garden: Harry N. Atwood, Claude Grahame-White, George W. Beatty, Frank Coffyn, Frank E. Boland and J. C. Berkhardt.

Bernard Levey enlisted December 29 in the Signal Corps of the United States Army and is now at Fort Wood, New York Harbor. Until the unwritten rule that enlisted men shall not be made army aviators is changed, Levey will probably not have an opportunity to fly in the service.

Oscar Brindley with Edward R. Shaw, former manager and motion picture photographer for Robert Fowler, are making plans for a round the world trip by aeroplane, proposing to start March 1 from New Orleans. Brindley is also reported to be planning to break the altitude record at New Orleans this week and besides to have asked the Wright Company to build a special machine for trans-Atlantic touring.

The California Aviation Company is building a testing machine for Osam Sherdow, Japanese inventor of a patented automatic stability device.

Alvin K. Longren, of the Young Aviation Company, Topeka, Kans., has recently given successful exhibitions with a Curtiss-type biplane, fitted with Hall-Scott motor. He was well received when flying at Greenville, Tex., Blackwell, Okla., Winfield, Kans., Waxahachie, Tex., and elsewhere.

Charles H. Shoemaker, a graduate of the Curtiss San Diego school, is now with the American Aeroplane Manufacturing Company and School of Aviation, in Chicago, waiting for decent weather to try out a new American biplane built for Isaac Tarnapool.

WRIGHT COMPANY LOSES A SUIT

New York, January 20.—Supreme Court Justice Cohalan dismissed on Wednesday the suit brought by the Wright Company to recover \$15,000 from the Aero Corporation, Ltd., which managed the Belmont Park Meet in September, 1910.

Lawrence L. Gillespie and Allan A. Ryan, two of the defendants, testified that the meet cost more than \$228,000, of which \$20,000 went to the race track owners. The attorney for the Wrights argued that his clients were promised \$20,000 before the race track proprietors were paid. Their contract entitled them to \$10,000 for participating in the Belmont Park Meet, and any profits over the expenses up to \$15,000.

The defendants contended that the receipts did not provide profits to the amount named. The judge decided that the Wrights had an insufficient cause of action.

P. W. PAGE CARRYING MOTION PICTURE MACHINE OPERATED BY THE MOTOR OF THE BURGESS HYDRO

Mrs. Russell Sage and Miss E. L. Todd have offered an aeroplane and \$750 for equipment to the Signal Corps of the New York National Guard. At the request of Lieut. Col. Frederick T. Leigh, commander of the Signal Corps, the offer has been referred to Governor Dix. In the event of the offer being accepted, 15 Signal Corps men will be detailed to receive instruction in aeronautics. It is supposed that the machine in question is the biplane which Miss Todd built at Mineola in 1910, and which made one flight with Didier Masson as pilot. At that time the biplane had a Rinek motor.

At New Haven, Conn., a hydroaeroplane club is being formed by the members of the Aero Club of Connecticut. Arrangements have been made for a hydroaeroplane demonstration in New Haven harbor on April 15.

Louis L. Crane, C. Crane and John F. Callaghan, of Brooklyn, incorporated at Albany last week the "Louis L. Crane's Airship Transportation Company of Brooklyn." The capital is \$100,000. The incorporators have not any machines at present, and their ideas about conducting a business of carrying passengers by airships are said to be rather nebulous.

The Thomas brothers' headless biplane is flying practically every day over the snow at Bath, N. Y. It is a passenger-carrying machine with spread of 36½, chord 5½ feet. It has carried three passengers, with oil and gas, a total weight of 502 pounds. A 50-horsepower Kirkham motor is used.

Aero missionaries are to be sent out by the Aeronautical Society, New York. They are George S. Bradt, treasurer; Wilbur R. Kimball, former secretary, and Thomas A. Hill, acting president. Their services are at the disposition, gratis, of any reputable body in the city of New York or within easy travelling distance. Applications for services should be addressed to the General Secretary, Aeronautical Society, 250 West Fifty-fourth street, New York, N. Y.

Captain George W. MacKay, National Guards of Michigan, who recently obtained his brevet at the Moisant school, has been detailed to purchase and test an automobile wireless outfit. This will be used in conjunction with wireless installed in a monoplane. A Lion car has been equipped with a 50-foot cane pole for the purpose, the complete outfit weighing 250 pounds.



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318 North 8th St.
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E. Percy Noel,
Secretary.

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BULLETIN

Opening of Quarters Thursday Night

There has been considerable delay on the part of the real estate agents which has held back the date of opening of the club quarters. It is expected that everything will be in order for the first meeting, Thursday at 8 p. m., February 1. In any event the meeting will not be again postponed.

Club Not Promoting in Aero Tour

Although the board of governors of the Aero Club has not been approached in regard to participation in any way in a plan to hold an aerial reliability tour this summer, it is not probable that the club will be the organizer.

If such a tour is held the Aero Club would undoubtedly be interested in it and endeavor to assist in making it a success.

Will Compete In Match Race

About the middle of February, the date to be determined by the meteorological conditions, William F. Assmann, pilot of the Aero Club of St. Louis, and J. H. Wade, pilot of the Aero Club of Cleveland, will start on a match race from San Antonio, Tex., in the balloons Miss Sofia and Buckeye, respectively.

The race, which is to settle a pleasant argument between the two pilots, will also be an endeavor to break in the existing Lahm cup record held by Alan R. Hawley.

A combined oil-and-water gas will be used for inflation, which, it is promised, will be about equal in lifting value to coal gas.

Pilot Assmann leaves St. Louis for the south on February 5. The aides have not been named.

FLIERS BUSY AT KINLOCH FIELD

Kinloch, St. Louis, Mo., January 29.—Although the weather was still cold, a slight improvement brought out all the machines at Kinloch and a solid week of unusual activity was the result. On Monday Antony Jannus spent hours in the air. He is teaching seven Benoist school pupils, all of whom are progressing rapidly. The students are F. M. Bell of El Paso, Tex.; Peter Glasser, of Billings, Mont.; P. G. B. Morriss, of England; Fred Hart, of Girard, Ill.; Ray Wheeler, of Washington, D. C.; Alfred Boulett, of Paris, France, and Miss Katherine Stinson, of Jackson, Miss. Everybody is now quite content to dress warmly for the cold weather, and even Jannus, who never gets a rest, is no longer afflicted with cold feet.

So much of the flying of the early part of the week was spent in teaching that, except for A. Smith's breaking a wheel of his monoplane from a very wild and uncertain straight-away flight, there was no excitement. On Thursday Ed Korn brought out his Roberts motored Farman-type with new ailerons and Wright control levers and started practicing. He did some very clever work and after thinking things over decided to shorten the tail. This required but a few hours and proved a great improvement, but he had to increase the lift of the fixed surface to compensate for the reduced leverage,

and this took a day or so. After practicing on Sunday, Korn was about ready to fly some circles. Sunday was very windy and everybody expected Korn to come to grief, but he didn't.

The Benoist students are now doing practically all the flying for themselves and rather resent Jannus' intrusion, but he insists upon making things interesting for them by playing such tricks as switching off the motor at unexpected times and watching the fun. The fun is the student's utter consternation at the dreadful silence that follows, and this practice is calculated to keep the most heedless pupil on the jump thereafter. Three of the advanced students who have had eight lessons each, and Morriss, who is an old Bleriot flier, are expected to fly for their pilot's licenses next week.

Unusual interest has been shown by visitors to Kinloch, probably largely due to the advent of the new woman flier. Miss Stinson, who is now enrolled in the Benoist school, is a very clever automobilist and promises to be a clever flier. Jannus always opens the flying by trying out the plane and usually ends the flight with some spectacular banking and diving, always concluding the performance with the easy landing for which he is famous. A number of men and women who are interested in the science have been taken for flights during those parts of the days that were too windy for teaching. On four days Jannus had his whole flock of fledglings out on the field before daylight in order to avail himself of all possible teaching weather.

Captain John Berry, of balloon fame, is the latest enrollment in the Benoist school. Hoping to be one of the team that is to compete in the Gordon Bennett balloon contest in Berlin, he has decided if possible to be the sixth holder of both balloon and aeroplane licenses. He was out with the early birds, and has had four lessons during the week. On Wednesday, prompted by Captain Berry's example, William F. Assmann, the noted balloonist, took a spin in a Benoist plane to see how he liked flying. He declared himself enthusiastic over it and the dual system of teaching. He also promises to become a student in the near future.

On the same day Bernays Johnson, inventor of the Bernays Johnson wireless telephone, also had a flight with Jannus, and seemed quite disappointed that it could not be prolonged several hours, despite the cold. Among other passengers carried were Mrs. Hallard Struck, Miss Jessie E. Honey, Oliver Haupt, Charles Washem, who took photos from the plane, and Dr. Wagner.

Sunday was gala day on the field, from the number of visitors who turned out, and despite the wind and heavy mist, several passengers were carried, besides the two flights Jannus made without passengers. Major F. Lang, U. S. A., brought down Colonel J. J. Dooley, U. S. A., who was the first to take an aerial spin, and who declared that he had never before had so enjoyable and comfortable a ride. J. W. Sackridge, of Terre Haute, Ind., and M. A. Davidson, an automobile racer, were carried aloft for a breath of fresh air. Joe Waldron and J. A. Bergey also participated as passengers in the flights.



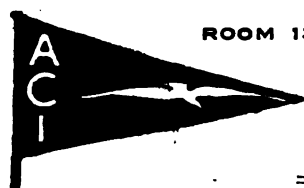
1,012,836, December 26, 1911.—Johan Richard Froberg, Richmond, Cal. A flying machine including a main, cordate, supporting plane, horizontal, lateral subplanes extending as wide as the main plane, adjustable, forward, arcuate lobes on the main plane, and ailerons mounted between the main and the subplanes.

1,013,152, January 2, 1912.—Harry C. Gammeter, Bratenahl, Ohio. A flying machine embodying wings, driving mechanism therefor, comprising a pair of pivoted members connected with the wings and having on opposite sides of their pivots hand holds and foot holds, whereby the operator may exert simultaneously the power of both arms and both legs.

1,013,219, January 2, 1912.—Cleveland A. Rex, Amarillo, Tex. An aerial vehicle comprising a body, wings pivotally supported by the body and having projections, an operating device having connection with the projections of the wings and supported by the body, and a member supported by the

(Continued on page 364)

THE AERO CLUB OF ILLINOIS



OFFICE
ROOM 130, THE AUDITORIUM
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BULLETIN

To the Members:

At the first session of the Board of Directors for 1912, called by the president for Tuesday noon, January 30, business of importance will receive attention. Chairmen of all committees are to be selected. Matters of policy are to be discussed and minor changes in the constitution and by-laws formulated, including an increase of the resident membership limit, an increase in the number of directors and the addition of certain new committees.

The recommendations of the board of directors will be submitted to the membership for ratification at an ensuing meeting, with proper notification.

HAROLD W. ROBBINS,
Secretary.

Banquet To Celebrate Second Anniversary

Saturday, February 10, 1912, the Aero Club of Illinois will have been incorporated two years under its present charter and name. The occasion will be properly celebrated by a banquet at the Auditorium at 6:30 p. m., at which there will be one or two short addresses, musical entertainment and the club's first view of motion pictures of the aeroplanes in flight at the recent meet of the International Aviation Meet Association, Chicago.

As there is to be a general reception of our friends, it is expected there will be a large attendance of club members and guests. Reservations are to be made in advance.

Ladies will be very welcome. The dinner is to be informal, however.

HAROLD W. ROBBINS,
Secretary.

Model Competition Organized

Invitations have been mailed to all club members and many others, including those in remote districts whose inquiries in this direction have indicated activity in this direction, to become interested in this organized work, which contemplates a system of co-relation; educational talks, illustrations and correspondence; and prizes in addition to other recognition for competitive work.

Possibilities at the high schools and technical schools are to be developed specially and the students will be invited to take part in a subsequent meeting at the Aero Club of Illinois headquarters, Auditorium, probably Saturday morning, February 10.

Three different classes may be distinguished in model development and will have separate recognition. They are:

I. Models designed for Flight: (a) Rubber band motor; (b) power models.

II. Scale Models of Large Aeroplanes: (a) Accuracy; (b) workmanship.

III. Original Machines or Devices for Large Machines:

(a) Idea; (b) workmanship.

The prizes are at present as follows:

A Grand Prix, cup for actual flight, to be contested for yearly.

A gas motor, offered in connection with the competition of power-driven models.

A similarly desirable premium to be awarded for thesis work, for the benefit of those who cannot come to the trials and may have similarly good thoughts to communicate by correspondence.

Licenses, for performance, according to conditions prescribed by the parent organization.

The organization system complete in all respects is to be presented in the near future.

Captains Lunch With Colonel

Officers in charge of the membership campaign of the Aero Club of Illinois reported in force, Wednesday, January 24, at the noon luncheon in the club headquarters. The matter of premiums was reviewed. There have been offered to date the following not yet awarded:

In recognition of all new memberships obtained by May 30, and for pro rata distribution, \$100 by Frank X. Mudd; as a diamond medal, fob or currency, for the first 25 new members secured by one man, \$50, by Charles E. Bartley; for the greatest number of new memberships secured by one person before May 31, a \$25 premium accident policy, by Wm. Bartholomay, Jr.; to the first 25 members submitting new and acceptable applications, beginning January 17, 1912, the first of the fiscal year, a 14-karat gold club button, by Charles E. Bartley. Further offers are to be added.

W. G. Conybear, Company "A" captain, called for 50 more applications to be reported in connection with his company.

T. Edward Wilder, before leaving for the south, February 5, expects to have Company "F" in line for aggressive work during his enforced absence of 60 or 70 days.

James L. Stephens selected Eugene Rummier, attorney, and probably Irving Woodward, who was in charge of the aviators' quarters at the International Aviation Meet, Chicago, to properly equip Company "H" for the campaign.

D. D. Griffiths had in common with some other aggressive captains been forced recently to devote himself to preparations for the Chicago automobile show, but when seen later on the opening night at the Coliseum, predicted that he would report encouraging results at the next membership session.

Personal Paragraphs

When the business manager arrived at the Coliseum automobile show on the opening night he found Sam A. Wiles leaning against a column and unable to say a word on the subject of an aeroplane exhibit, but his gaze seemed to linger wistfully in the overhead spaces, where a full-sized sky-machine could have encouraged all weary ground-men to look up and aspire to a loftier ideal.

The Colonel, in regalia, was present.

Charles E. Gregory, at his exhibit of "self-starters," evinced a readiness to get behind and give the initial impulse where ginger is needed.

In conversation with an old friend, George Salzman, the racing driver, the business manager heard good report of Count Walter Lemon, a Buffalo member, of the Aero Club of Illinois, who has a new eight-cylinder aerial motor recently tried out by Beatty.

Our phone is Harrison 3289. Luncheon Wednesdays.

MORE LEGISLATION DESIRED

New York, January 26.—The Aeronautical Society of New York has taken up the subject of legislation to regulate aviators and their craft. Imperfect construction and incompetent aviators, it is claimed by the society, have been responsible for probably 80 per cent of all the accidents in aeroplanes, and the purpose of the proposed legislation is to provide for an inspection of aircraft by a competent body, and also a thorough examination of candidates for air pilot's licenses.

Model Aeroplanes

List of Those Interested Grows Rapidly

With about 20 clubs on the eve of permanent organization, with a total membership of something like 500 and as many more clubs under way, the future of model and kite flying and gliding is assured.

This week we give a large addition to the list of those who are desirous of organizing clubs, as follows:

NEBRASKA.

Lincoln—Richard Beach, 447 South Twenty-sixth street.

Lincoln—Homer A. Noble, 2767 E street.

NEW YORK.

New York—George S. Warren, 301 West Fifty-first street.

New York—Howard Putzel, 215 West Ninety-eighth street.

Buffalo—H. L. Moersfelder, 34 Ketchum place.

Hammondsport—Chas. G. McNamara, Box 177.

WISCONSIN.

Eau Claire—V. B. Kildahl, 608 Galloway street.

WASHINGTON.

Tacoma—R. W. Hansen, 414 South Thirty-third street.

Seattle—Fred Weber, Pier No. 2.

NEW JERSEY.

Mt. Kisco—Prescott Brown.

Washington—Chas. Scranton.

MINNESOTA.

Duluth—Tulsa I. Smyth.

MICHIGAN.

Saginaw—S. C. Aller, 700 Bristol street.

Bangor—Ray W. Hampton.

Benton Harbor—Frank Chidester, Hotel Eastland.

MASSACHUSETTS.

Pittsfield—Chas. B. Olsen, care Eagle Pub. Co.

Haverhill—A. Lagasse, 7 Park avenue.

CALIFORNIA.

Los Angeles—E. A. Smith, 1328 Ingraham street.

San Francisco—Polytechnic Aero Club, 25 Carl street.

PENNSYLVANIA.

Meadville—Max B. Duncan, 371 North street.

Crafton—Reid W. Bond, 28 Highland avenue.

TEXAS.

Temple—Owen Percy Smith, care Temple Candy Co.

CONNECTICUT.

Greenwich—Anton N. Jensen, Box 262.

ILLINOIS.

Chicago—Arthur Peterson, 1817 Melrose street.

St. Louis Club to Meet February 29

The Aero Club of St. Louis has granted the use of its club quarters for a meeting for organization purposes of a club to be devoted to model and kite flying and gliding. This meeting will be held at the Aero Club, room 606 Columbia building, Eighth and Locust streets, Thursday, February 29, at 7:30 p. m.

RECENT U. S. AERO PATENTS

Continued from page 362

body having a guide-way in which the projection of each wing is received, the guide-way of the member having a portion in the form of an arc of a circle, and another portion contiguous thereto having an angular shape.

1,013,268, January 2, 1912.—William H. Beery, Celina, Ohio. An airship comprising a cylinder open at its front and rear ends, plane supporting frames arranged in the front and rear ends of the cylinder, series of parallel horizontally disposed sustaining planes arranged in said frames, a propeller shaft revolvably mounted in and extending through the center of said cylinder, a series of propelling blades fixedly mounted on said shaft, means whereby the latter is driven to operate said propellers in the desired direction, raising and lowering planes highedly supported at the front end of the machine, means to adjust said planes whereby the machine is raised and lowered, a platform arranged on the upper side of the

cylinder, a steering plane pivotally mounted on said platform and means whereby said plane is operated to guide the machine in the desired direction.

1,013,484, January 2, 1912.—James E. Gaston, St. Louis, Mo. A flying machine including a frame, propelling means thereon, and an equilibrium-maintaining device mounted on said frame, and which equilibrium-maintaining device includes a transversely disposed tube, pivotally mounted at its center, and a pendulum, the upper end of which cooperates with said mercury-containing tube.

1,013,523, January 2, 1912.—Frank G. Vohs, St. Louis, Mo. An airship comprising a body, compartments located in the same, wheels supporting the body, a frame work mounted on the body, a shaft supported in the frame work and operated by a motor, a propeller located on the front end of the shaft and in advance of the frame work, a rudder located at the rear of the frame work, a propeller located at the rear of the rudder and connected to the shaft by a knuckle joint, a pair of horizontal propellers located above the frame work, means for placing the propellers in and out of operation, a horizontal plane located on the frame work beneath the horizontal propellers, a pair of tilting planes supported to the frame work and means for operating the same, a pair of elevating planes located in advance and at the rear of the body and means for operating the same.

1,013,601, January 2, 1912.—Michael Jovanovitch, New York, N. Y. A flying machine comprising a plane, a main body portion suspended solely from a transverse pivot on the under side of the frame, said body portion carrying propelling mechanism and having a forwardly projecting wedge-shaped portion with covered sides, a rearwardly extending horizontal tail piece, wheels on the rear sides, and a front wheel serving as a steering wheel on the ground and in the air, and a gear mechanism connecting the main body portion with the edge of the plane, whereby the pitch of the latter can be regulated.

1,013,818, January 2, 1912.—Maurico Roohat, New York, N. Y. A propelling device for land and water, comprising a carriage composed of a crib, a frame therefor and running gear, and a float adapted to occupy said crib and connected with the same and said frame.

1,013,851, January 2, 1912.—Joseph J. V. Kaulynskas, Philadelphia, Pa. A flying machine comprising a main frame, standards arranged fore and aft of and surrounding the said frame, bearings for said standards, shafts journaled in said bearing, a pair of compound central planes tiltably mounted on said shafts, auxiliary single planes arranged in pairs tiltably mounted on said shafts upon each side of the central planes and means for simultaneously operating each pair of planes independently of each of the other pairs of planes.

1,014,031, January 9, 1912.—Henry H. Ashlock, Kansas City, Mo. A flying machine including a sustaining plane, supplemental planes, and means for shifting said supplemental planes to cooperate with the sustaining plane to form a parachute, and means for automatically locking said supplemental planes relative to the sustaining plane when used as a parachute.

1,014,082, January 9, 1912.—Arthur Randolph Monro and Harold Beatty, Berkeley, Cal. The combination with the sustaining planes of an aeroplane, of an equilibrium attachment secured to and overhanging the rearward edge thereof, the same comprising an open bottomed pocket formed of two triangular sides situated with its apex in the direction of travel and the base thereof being in approximately the horizontal plane of the sustaining plane of the aeroplane.

1,014,194, January 9, 1912.—Sylvester M. Williams, San Francisco, Cal. A flying machine having a plurality of superposed aeroplanes set at opposed angles to each other, parallel frames holding the outer edges of the planes, upright standards connecting the planes, and horizontal arms pivoted at their ends, extending from each side of the standards, and bracing the parallel frames.

1,014,195, January 9, 1912.—Gust Williams, Bangor, Me. A propeller mechanism comprising a turntable, a vertical shaft journaled in said turntable, a gear mounted on the upper end of said shaft, said turntable comprising an upper and lower member, a shaft journaled in the upper member of the turntable, a gear slidably keyed on said shaft, said air wheel having feathering blades, and means for simultaneously feathering said blades and throwing said gear out of mesh.

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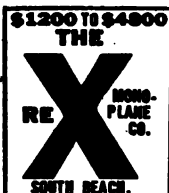
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February 10, 1912

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Vol. III No. 19

RACING AT DOMINGUEZ FIELD—Horace Kearny, Foreground, and Hillery Beachey
Competing at the Los Angeles Meet

My Friend, George W. Beatty, Says:

"I CAN TEACH A WOODEN INDIAN TO FLY"

And Beatty is right, he speaks from experience, as he is conducting the most successful school in America today and has turned out seven successful flyers in the past six weeks. He charges \$250.00 for his course and uses a Wright biplane.

It makes no difference what machine you learn on, the principle is the same in all. EARLE L. OVINGTON learned to fly a monoplane at Pau, France, under Louis Bleriot. One day last summer he stood watching the late Cromwell Dixon flying his Curtiss biplane and when Dixon landed Ovington asked permission to "Feel Out" a biplane as he had never even sat in one before. HE FLEW FOR THIRTY-TWO MINUTES FIRST CLIP OUT OF THE BOX.

T. O. M. SOPWITH, the great English aviator, learned to fly a BIPLANE under Farman. He imported a 70 H. P. Gnome-driven Bleriot racer, waited impatiently while it was unpacked and assembled at Nassau Boulevard and without even testing the motor climbed into the machine and flew forty miles cross country. HIS FIRST TIME IN A MONOPLANE.

The most spectacular flight of the year was Sopwith's great cross-country flight over New York and Brooklyn and far out over the ocean to bid farewell to the S. S. OLYMPIC and drop a mail bag aboard from a height of two thousand feet. I was with him as passenger on that occasion and during the forty-eight minutes we were in the air I drove the old Howard-Wright machine a total of fourteen minutes while he consulted our route map. I NEVER TOOK A LESSON IN MY LIFE.

THE MYSTERY OF FLIGHT IS A THING OF THE PAST, anyone that has brains enough to ride a bicycle can learn to fly an aeroplane, the principle is the same. You CANNOT fly a machine, however, that is not properly built, and you should not be talked into paying a dollar more than I charge for machines that are.

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Edited by E. PERCY NOEL

DUNNE MONOPLANE SHOWS AUTOMATIC STABILITY

London, January 25.—The entire future of aviation is centered in the one word—stability. Stability is the very life and soul of the aeroplane. Recently, an important step towards the final solution of the intricate problem was made at East Church, by J. W. Dunne, whose stability device has already been described in AERO. Briefly, the facts are these:

On Friday, January 12, at East Church, J. W. Dunne conclusively demonstrated the natural stability possessed by his machine. His flight was witnessed by Alec Ogilvie and by T. O'B. Hubbard, secretary of the Aeronautical Society. Dunne made a flight lasting 6½ minutes, including two turns. Before starting he was handed a blank sheet of paper, previously initialed by the observers; on this sheet of paper he wrote, while the monoplane was flying at over 60 miles an hour, a message. While the message was being written Dunne had both hands off the control levers, thus freely abandoning his machine to the air.

The significance of Dunne's achievement lies in the conclusive proof it affords that real stability may be obtained, and this not by devices such as gyroscopes, but by the inherent qualities of certain shapes and forms of surfaces, and altogether independently of the action of the pilot. In other words, the problem of "natural" against "mechanical" stability, Dunne claims, has been solved.

The monoplane on which the flight was performed is built on similar lines to the biplane which proved so successful somewhat over a year ago, and which aroused Orville Wright's admiration. It is remarkable for the fact that it possesses no tail, rudder, or controlling surfaces of any kind; all the steering functions are performed by two small flaps hinged to either wing-tip. The "natural" stability is conferred by the peculiar shape of the wings, which slope backwards from the center, and are so curved as to absorb and neutralize the upsetting effect of wind gusts. The steering flaps are operated by two levers, one on either hand of the pilot's seat, which can be locked in position once the machine is headed on the desired course, and need not again be touched except for an alteration in the course or altitude.

J. W. Dunne was formerly attached to the old British Army balloon factory, and began his experiments seven years ago,

DUNNE'S MESSAGE: This is being written by the pilot of a single-seated monoplane to show that it is possible for him to fully observe while neglecting the control of his machine. I feel perfectly comfortable and can see well and clearly.—
J. W. DUNNE.

Dunne

C. D.

*This is being written
by the pilot of
a single seated
monoplane to show
that it is possible
for him to fully
observe while
neglecting the control
of his machine
I feel perfectly
comfortable
and can see well
and clearly
J. W. Dunne*

when he first constructed a "natural" stability model aeroplane which was successfully flown before Lord Rayleigh. His first full-size machine was built at the army balloon factory, and flown by Lieut. Gibbs, in Perthshire, in October, 1908.

The Dunne monoplane, like its prototype biplane, is designed to possess natural stability and is tailless in the ordinary sense of the term. In principle, however, the V-plan form of its wings gives it two tails instead of one, and the hinged flaps in the trailing extremities of the wings provide it with two elevators instead of one. These flaps are under independent control, and serve the purpose of steering the machine horizontally and vertically.

The principle of stability of the Dunne aeroplane has to do entirely with the special formation of the wings, which are generated on the surface of a cone. The formation of the wings gives a variable angle of incidence from shoulder to tip, which in conjunction with the V-plan form, confers on the machine the principle of the fore and aft dihedral angle longitudinally, which is one of the best methods of obtaining natural stability, and is found in every successful aeroplane. Automatic lateral stability is obtained by the leading edge of the wing tips being turned down, whereas in a number of other machines the trailing edge of the wing tips is turned up. Relatively, the result should be the same, but the results obtained by the Dunne monoplane appear to be superior to that of any other machine, as far as natural stability is concerned.

DEMANDS APOLOGY FROM A. C. A.

New York, February 5.—(Telegram.)—The expected has happened. Alleging that together with President Taft it was treated with gross discourtesy by Robert J. Collier at Sherry's banquet, the Aeronautical Society has demanded an apology from the Aero Club of America. The offense was caused by Collier's remark that when Taft attended the Aeronautical Society dinner last year, he "got into the wrong pew." Resolutions adopted unanimously by society directors set forth that Collier's statement reflects on the integrity of the society and the wisdom of Taft. The society says it has always comported itself towards the Aero Club with scrupulous regard to amenities to a gentlemen's club, and asks the Board of Governors to explain the communication sent Collier at New Orleans. The report that he has enlarged the directorate is spreading. Secretary Charles Walsh has resigned. G. F. Campbell Wood will be reinstated as secretary.

COLLIER ON WAY TO THE ISTHMUS

New Orleans, La., February 2.—Robert J. Collier and a party of New Yorkers arrived here by special train yesterday, on the way to Panama. It is possible that Collier will be a passenger in his Wright machine, on a flight across the Isthmus in the very near future. He was "not in" to the press while in New Orleans.

Louie Mitchell, proprietor of the American Aviators aggregation, has announced passenger-carrying at \$25 a ride, for Saturday and Sunday. His two Wright machines are quartered near City Park race tracks. Oscar Brindley, one of the American aviators, carried press representatives for joy rides yesterday, and each aviator made a short flight alone. John Heth also announced that he will carry passengers for a consideration.

A permit has been obtained by H. C. Bulask, representing the International Aviation Company of Charles J. Strobel, Toledo, O., for the conducting of aeronautic experiments at West End, a city resort on Lake Pontchartrain. Machines and mechanics are already here. If the interest prove sufficient, a school will be started, using land and water machines, at or near the resort.

With the advent of Mardi Gras, numerous fliers are anxious to book flights, but the alleged Progressive Union offers no encouragement.

NEW CORPORATIONS

Kopesa Air Navigation Company, Chicago, Ill., \$20,000; manufacturing and exhibition of air navigating craft. Incorporators, August Schocke, Cella Schocke, Alexander Kopesa.

HAMILTON'S SPIRALING CAUSES MISHAP

Galveston, Tex., February 3.—After about 10 days of good flying here, carrying passengers from the grounds at Fort Crockett and later from the field of the Chicago School of Aviation, Charles K. Hamilton is in the hospital with a broken collar bone. His accident occurred on the first day of what was to have been a three-day meet. Hamilton has cancelled all his contracts temporarily.

The accident followed a number of spiral dives of the most spectacular sort. In the last of these heavy banking caused the machine to assume a more nearly vertical position in the air. The strong wind caused skidding and before Hamilton could right the machine an aileron struck the ground. Hamilton jumped, the machine running over him. He lighted a cigarette, made some humorous remarks and protested when he was ordered to the hospital.

SOCIE TYTO BOOST NATIONAL GUARD

New York, February 3.—The Aeronautical Society has appointed a committee to help the War Department in its efforts to encourage aviation in the National Guard of every state. This committee will co-operate with Lieut. Foulois, U. S. A., inspector-instructor of the aeronautical division of the Department of Militia Affairs at Washington. A conference with Major General Leonard Wood and Brigadier General James Allen, the head of the U. S. A. signal corps, to arrange that the activities of the society may not clash with anything the Government is doing, has already been held.

Arrangements will be made by the society to send out lecturers to address the soldiers on the fundamentals of aviation. When the soldiers are ready to take up the work of building aeroplanes, the society will send a competent aeronautical engineer quipped with the necessary plans to instruct them in aeroplane building. Later the society will provide instructors in flying. Wilbur R. Kimball, George S. Bradt and Frank E. Boland have been suggested as lecturers in theory, while Kimball, George W. Beatty, Ladis Lewkowicz and other flying members of the society are willing to teach the men how to build their machines and fly them.

Vedrine's Travels Ninety Miles an Hour

At Pau, France, on January 13, Jules Vedrine, piloting the new 100-horsepower Gnome engined Deperdussin racer, broke the world's record for speed. The official figures have just come to hand and show that Vedrine covered 142.430 kilometers (88.51 miles) in one hour. One hundred and fifty kilometers (92.2 miles) was covered in one hour two minutes 43 4-5 seconds. The highest speed attained in any one circuit of the course was at the rate of 145.177 kilometers (90.2 miles) per hour. The previous record of 82.68 miles per hour was held by Nieuport, and was made on a Nieuport monoplane.

Bumbaugh Designed Balloon Built for Army

LOS ANGELES MEET CLOSES A THOROUGH SUCCESS



PARMELEE AND BEACHEY RACING ON THE BACK STRETCH.

Los Angeles, Cal., January 28.—Introducing a distinct innovation in the field of aviation on the Pacific Coast the People's Aviation meet came to a successful close this afternoon, after nine days of continuous flying, such as has never been seen here before. It is true that there could have been less friction between the various factions of the management. Possibly there could have been features in the management which would have cut down the expense and left more money to be distributed among the aviators. It might be that some wrinkles in advertising might have been tried other than those used to bring out larger crowds, and it is possible that a great deal of friction along various lines might have been eliminated. But all problems look very different afterwards, than before hand.

Whatever the drawbacks of the meet, and it is not certain that any of them could have been eliminated, neither the people of Los Angeles nor any other Pacific coast city ever before witnessed such a hippodrome of flight as has been held under the direction of Dick Ferris. Totally different from any previous exhibition, it caught the multitude at once, and while there is probably little to relate along the development of the science of flying, the show should be notable for its variety if nothing else.

Financially, the meet was a doubtful success, from the standpoint of the aviators, there being about \$12,000 to divide between them. The total receipts were about \$45,000, \$10,000 going to defray the initial expenses, \$8,000 to defray the expense of the aviators in coming here. The balance was divided among the promoters and aviators, the latter receiving 55 per cent of the gross. It is thought by some that Saturday and Sunday shows only would have paid better and left more to divide among the fliers.

From the standpoint of the public, the meet was most satisfactory. While there was much regret expressed that there was not more money for the fliers, the backers heaved a great sigh of relief when it learned that it was not to be called upon to make up the usual deficit attendant on such gatherings.

Aside from introducing the hippodrome features of aviation, the meet was instrumental in introducing several new aviators, who it is expected will be heard from in many ways before another year passes. William Hoff, formerly chief mechanic for the late Eugene D. Ely, flew in his first meet, entering most of the speed events and gathering in second and third prizes in nine out of 12 events entered. Hoff is well thought of by both the public and his companions and is decidedly looked upon as a comer.

Weldon B. Cooke, the Oakland aviator, came here in a home-made machine, equipped with a Roberts motor, and went in for total duration, winning the event, besides carrying off several daily duration prizes. He flew about 18 hours during the meet.

Farnum T. Fish, just out of a three days' tuition at Dayton, where he purchased a standard Wright biplane, was second in total duration and also carried-off some of the daily duration prizes. He thought nothing of carrying passengers and made this practice a daily event.

Horace Kearny, who last summer met with a series of accidents in the middle west, with his Hall-Scott equipped Benoist biplane ran consistently throughout the meet, entering most of the speed events and getting a place among the prize winners. Although, like Hoff, he did nothing sensational, Kearny was far from being an also-ran and can well be credited with being one of the minor stars, at least, of the meet.

That Phil Parmelee with his model X and Lincoln Beachey with his 1912 Curtiss, were attractions, goes without saying. A fierce competition arose between these two from the start and after the first day, it was merely a game of stump, each trying to outdo the other. Both excelled in the figure-eight and both lowered the existing records materially.

W. B. Atwater of the Curtiss School, flew only two or three days, remaining on the ground out of respect for the memory of Page, who was a dear friend, so that his work could not be properly passed upon. However, what little was seen of him made a good impression.

Glenn Martin, the Los Angeles manufacturer, knows how to use an aeroplane as well as make one, and there was very

MRS. FLORENCE STONE-FERRIS AND HOWARD GILL.

little going on that he did not participate in. For steady work, cheerfully performed, Martin should have been given a special prize.

Cliff Turpin and Howard Gill made names for themselves, carrying passengers until the latter was injured and Turpin

was compelled to go it alone. Hillery Beachey flew every day, and while he studiously avoids attempting the feats of his brother, he figured well in every event in which he participated.

Miss Blanche Scott succeeded in downing the rumor that she could not make a right-hand turn, and negotiated them with the same apparent ease as her masculine rivals. She proved to be one of the drawing cards of the show.

Thursday was gusty, but marked by some of the best flying ever seen in Southern California. Several striking exhibition flights were made by L. Beachey and he was practically the show of the afternoon. During the afternoon the wind attained a velocity of 37 miles an hour and except for the fact that Miss Scott was not allowed to go up by her managers the program was carried out much as usual. Beachey and Parmelee went after altitude, but got no farther than 5000 feet.

A night show postponed from Wednesday evening was responsible for some thrills on the part of a small but enthusiastic audience. Martin, Beachey and Parmelee went up, their aeroplanes decorated with red fusées and acetylene burners. A miniature fort was stormed with great effect, real bombs being dropped over the city accompanied by loud explosions. It was the first night flying ever seen in California.

Friday was still gusty and accompanied by showers. It was marred at the end by a serious accident to Howard Gill, in his Burgess. Gill carried a woman passenger in the afternoon and on account of engine trouble was forced to land in a plowed field near the aerodrome. Slightly after dusk, he tried to take his machine to his hangar, Parmelee and Turpin waiting for him to go to the city with them. The latest reports from his bedside indicate that he will have a speedy recovery.

The afternoon exhibition brought out more amateurs than usual and there was fierce competition among the professionals. Beachey led in altitude with 3312 feet, the high wind rendering it extremely dangerous to try for more. Even at that, he amused himself by shutting off his motor when he had reached the height of his flight and glided to the ground in a grand spiral dip.

The Wright glider was shown for the first time in the afternoon, Parmelee making several trips across the field in the fragile vehicle. The machine was made on the grounds under his direction, at the expense of the aviation committee, in an effort to give the public an idea of the famous machine, with which the Wright brothers have been experimenting.

On Saturday, Lincoln Beachey with his 1912-Curtiss added his share to the general circus, effect of the week when he appeared as a woman aviator and carried off the honors of the day, with his impersonation of a fair damsel courting death in a biplane. Beachey has taken great pleasure in teasing Blanche Scott by claiming that he had a woman pupil, who could fly circles around her when she is in the air. Beachey further offered to produce the woman on Saturday, and this afternoon the audience was on the *qui vive* in an endeavor to ascertain the identity of the fair unknown.

After the first events of the afternoon had been pulled off, a heavily veiled woman dressed in the height of fashion, appeared on the field escorted by Hillery Beachey. Taking her place in Beachey's biplane, she was in the air before any one could make a close examination. In the air the erratic motions of the machine brought throbs of apprehension to the observers and caused many to turn away in fear that the woman would be killed. Glenn Curtiss merely smiled and said: "That cub Beachey is up to some more of his tricks again." The "woman" finally reached an altitude of 4000 feet and shutting off her motor glided sedately to earth, only to have "her" wig grabbed off by Miss Scott, who disclosed the smiling countenance of The Great Unbeatable. Beachey's stunt proved a great hit with the crowd and enabled him to tease Miss Scott and altogether he derived much satisfaction as the result of his escapade.

Another event of the day, was a demonstration of the Wright glider by Parmelee, the graceful landing of the machine winning the plaudits of the crowd. Miss Scott flew and on landing shut off her engine about 500 feet from the ground, making a pretty glide to earth. Cooke made a clean duration record remaining up all afternoon.

Sunday, the last day of the meet, while affording the most perfect weather of the period and furnishing one of the best programs presented, was a disappointment from the standpoint of attendance. Not more than 15,000 persons passed through the turnstiles. Cooke, as usual, carried off the duration honors, not only staying up during the entire session, but also taking a trip over Los Angeles at a height of 3,000 feet. He is the only participant who made this trip.

Farnum Fish, after staying up in the air most of the fore

"THE WOMAN OF MYSTERY"—LINCOLN BEACHEY.

part of the afternoon, came to grief while carrying a photographer, landing on a fence and smashing parts of both wings. Hillery Beachey came down in a field and sustained slight damage. Lincoln Beachey rose to nearly a mile and made a thrilling spiral glide to earth. Miss Scott flew cutting several new capers in the air, for which she was enthusiastically applauded by the crowd. Hoff distinguished himself by securing two seconds and a third place in speed events.

Summaries Day by Day

THURSDAY, JANUARY 25.

Amateur duration: Crawford (Curtiss), 20:00.

Daily duration: Cooke (Diamond), 2:30:00; Fish (Wright), 2:06:25; L. Beachey (1912 Curtiss), 2:22:00; Parmelee (Wright), 1:21:50; Gill (Burgess-Wright), 51:35; Kearny (Benoist), 31:03; Martin (Martin-Curtiss), 21:03; Turpin (Wright), 17:18; Hoff (Curtiss Model D), 12:30; H. Beachey, 12:00.

Five mile handicap: L. Beachey (Curtiss 1912), 7:11 3-5; Parmelee, 7:17 3-5; Martin, 7:36 3-5; H. Beachey, 7:37 1-5; Hoff, 8:23 3-5; Gill, 8 46 1-5; Kearny, 8:51 4-5.

International race (two and one-half miles): L. Beachey, 3:51 4-5; Kearny, 5:07 2-5; Turpin, 6:38.

Free-for-all (3 3-4 miles): L. Beachey, 4:20 4-5; Martin, 4:55 3-5; Parmelee, 5:09 1-5; Kearny, 5:26 1-5.

Man hunt: Gill, 25:00. Exhibition by Beachey, 13:35. Thirty minute altitude, Beachey, 5,600 feet. Exhibition, L. Beachey, 12:05.

Man, Motorcycle, horse, automobile, aeroplane race: Turpin, 2:35.

Continued on Page 388.

HOW TO DESIGN A MODERN AEROPLANE*

By E. R. ARMSTRONG

The stability in flight and the extent of the control of an aeroplane depends on the correct balance of the different forces brought into action by the flight of the machine.

Every correctly designed aeroplane will fly best at some specific angle of incidence, depending on the camber, shape and area of the planes, the weight carried per square foot of surface and the power of the motor. When an aeroplane is flying at its correct angle for horizontal flight, the propeller shaft should be horizontal.

Attention has been previously directed to the importance of locating the center of the propeller in the center of the head resistance, but the designer should be cautioned against obtaining such a balance of the head resistance by raising the motor so high in the machine that the center of gravity is above the lifting area. This, of course, applies to the direct-connected propeller. In an aeroplane of the Wright type, in which the propellers are chain-driven, the position of the propellers does not particularly affect the center of gravity. Want of stability due to a high center of gravity is much more harmful than a want of balance of the head resistance. The latter can be corrected by the control areas, but a high center of gravity would be dangerous at all times. Generally speaking, the propeller is located somewhat above the center of the head resistance in monoplanes, and this may be a good feature, for if the motor stops the greater resistance of that part of the machine below the propeller will tend to make the machine assume an angle of descent, so that a volplane becomes almost automatic.

The location of the center of gravity in a fore and aft direction is usually the only problem to be considered, as aeroplanes are mostly built symmetrically on either side of the center line. An exception to this rule is the Wright machine, which must be balanced laterally because the motor is placed off center. This is done by the weight of the aviator.

In order to correctly balance any aeroplane it is necessary to know the location of the center of pressure of the wing area used when it is at its angle of incidence. Providing that this point is known, it is a very simple matter to balance either a monoplane or biplane, if it is of the non-lifting tail type. As an example of balancing a machine of this type, in Fig. 21 is given the method as applied to a biplane of the Curtiss type. The complete machine with gasoline, oil, water and pilot in place is balanced on the skid as shown, at a point 37 per cent back from the leading edge, because the center of pressure of the supporting surface when at the angle of incidence of the machine is at this distance from the leading edge.

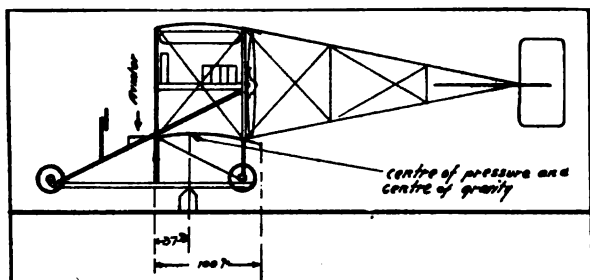


FIG. 21.

To balance an aeroplane of the lifting tail type, such as the Farman biplane or Bleriot monoplane, the method is somewhat different. The center of pressure of the main surfaces of support, the total weight of the machine in order of flight, and the center of pressure of the tail must be known. The calculation and operations necessary to balance a Bleriot-type monoplane as illustrated in Fig. 22 will now be given.

The center of pressure of the cross channel type Bleriot is 25 per cent back from the leading edge. Assuming for

the machine considered that the total weight in order of flight is 750 pounds and that the width of the wing is seven feet then the center of pressure would be 1.75 feet from the leading edge. The weight carried by the tail is assumed to be 50 pounds. *The machine must be so balanced that the distance in feet from the center of pressure to the center of gravity when multiplied by the total weight of the machine in pounds carried by the main planes will equal the amount found by multiplying the weight supported by the tail in pounds by the distance in feet from the center of pressure of the tail to the center of gravity of the whole machine.* For the example given the distance

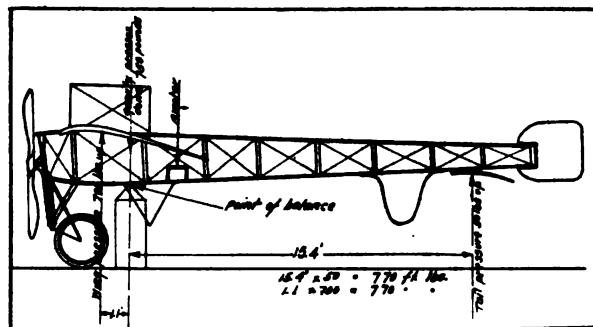


FIG. 22.

from the center of pressure of the main surface to the center of pressure of the tail surface is assumed to be 16.5 feet. After several trials we find that if the center of gravity is located 1.1 feet back of the center of pressure of the main surface, the conditions of the problem are satisfied. For 1.1 multiplied by 700 equals 770, 16.5 minus 1.1 equals 15.4, which is the distance from the center of gravity to the center of pressure of the tail. Then 15.4 multiplied by 50 which is the weight supported by the tail gives 770.

To balance a biplane, proceed in the same manner.

In figuring the load to be carried by the tail in working out a new design, it is well to bear in mind, that the angle of incidence of the tail should be less than the angle of incidence of the main planes. The reason of this is shown in Fig. 23, in a somewhat exaggerated form. It is seen that if the tail is at a greater angle than the main plane, there is a sort of negative dihedral angle between them

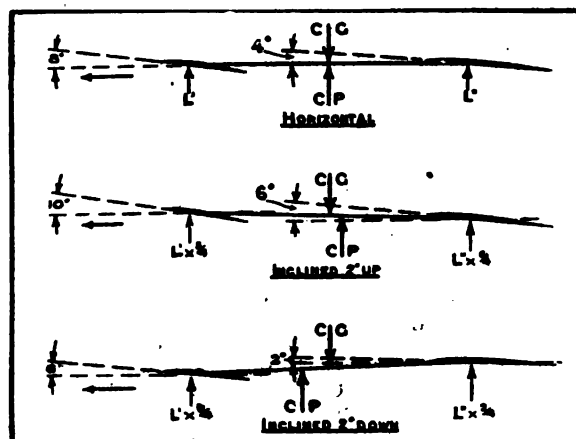


FIG. 23.

longitudinally, the tendency of which would be to upset the equilibrium of the machine, and the pilot must be ever on the alert to maintain his balance.

The effect of the smaller angle of the tail to establish a balance is readily apparent.

In the upper case Fig. 23 it is assumed that the front plane is half the size of the back plane, but that it is set at an angle of incidence of eight degrees, against an angle of four degrees for the back plane.

For small angles the lift is proportional to the angle, and consequently the front plane, being at double the angle of the back plane, will lift twice as much per square foot. The center of pressure when the aeroplane is horizontal will consequently be half-way between the centers of pressure of the two planes, and the center of gravity must, therefore, be adjusted to fall at the same point.

In the center diagram the aeroplane is imagined to be tilted up at an angle of 20 degrees, and consequently the front plane will make an angle of incidence of 10 degrees, and the back plane one of six degrees, that is to say, the front plane will have increased its lift by a proportion of 10 to eight, that is of five to four, while the back plane

will have increased its lift in the proportion of six to four. The center of pressure has consequently travelled back, and will now be behind the center of gravity, and thus a righting couple will be applied, which will tend to move the aeroplane back to its horizontal position.

In the third case the aeroplane is imagined to be inclined downwards at an angle of 20 degrees. In this case the lifts of the two planes will be respectively three quarters and two quarters of their original lift, consequently the center of pressure will have moved forwards, still giving a righting couple. It must be noted that the angles chosen here are arbitrarily selected because they are easy to handle. In practice the angles are more like nine degrees and 13 degrees.

It can readily be seen that if the front plane is at a lesser angle of incidence than the back plane, the reverse effect will take place.

To be continued next week.

FIRST PHOTOGRAPH OF HOTEL ROYAL, POINCIANA, MADE FROM THE AIR.

HYDRO POPULAR AT PALM BEACH

Palm Beach, Fla., February 1.—Since the arrival here of a Burgess hydroaeroplane for Walter Brookins, the throng of wealthy people who frequent the hotel Royal Poinciana, have begun to look upon aviation in a new light. Stormy weather the past several days, has not been conducive to much flying, but the number of applications for passenger flights is large and renewed activity is expected as soon as the weather clears.

Brookins' hangar is built on the very shore of Lake Worth, the doors opening toward the water like a boathouse. A single slide to accommodate the hydroplanes or floats leads down into the water. The Burgess he uses is a standard machine, with four-cylinder Wright motor.

Among the passengers who have already been carried are: Miss Alice Brown of Newcastle, Pa.; Robert Allyn, of Hartford, Conn.; M. C. Sweeny, R. G. Fitzgerald, Hayden W. Crosbie, George G. Currie and George F. Lawson. Twelve prominent society people have booked flights with Brookins.

Lawson, who is Brookins' chief mechanic, came here direct from the Burgess Company and Curtiss factory at Marblehead, Mass. He was with Harry Atwood on his record-breaking cross-country flights last summer. He was the first passenger carried.

The first photograph taken of the Royal Poinciana, from the air, was made by Hayden Crosby, on a flight with Brookins.

BURGESS ACTIVE AT SEA BREEZE

Sea Breeze, Fla., January 31.—W. Starling Burgess and Phillips W. Page are making daily flights on the beach and the Halifax River. Page is instructing Patrick Grant, Jr., son of Judge Robert Grant of Boston, Mass., and John F. Gray of Philadelphia, Pa., whose family have a summer home at Ormond.

Burgess opened the flights last Thursday with a couple of short flights, carrying Mrs. Burgess as passenger, concluding with a solo flight to Ormond and back, a distance

of 10 miles.

On Friday he gave an exhibition before the congressional committee returning from the opening of the new railway from Tampa to Key West, and made five other flights.

Page had his first flights on Saturday, giving one lesson to Grant and two to Gray. Sunday was a busy day with four flights by Burgess and six by Page, these latter being lesson flights for the two pupils. The aviators are enthusiastic over the beach as a getaway while the Burgess hydroaeroplane is in daily use on the Halifax River, which affords a perfect course for starting and alighting.

BROOKINS IN THE BURGESS—HANGAR IN BACKGROUND.

The winter visitors flock to the shed erected in front of the Hotel Clarendon, and Burgess, Page and the mechanics are kept busy explaining the operation of the machines. They plan to stay until about April 1, Clifford L. Webster bringing a Burgess hydroaeroplane to Ormond next week.

GYRO ROTATING CYLINDER MOTOR DESCRIBED

The Gyro Motor Co. of Washington, D. C., has lately placed on the market a rotating cylinder motor similar in general appearance to the Gnome motor. Recent performances of aeroplanes equipped with Gyro motors will make the description of special interest to the practical aviator, as it may truly be said that the perfection of the aeroplane depends more on the production of the perfect motor than on any other feature. Emile Berliner, of telephone and talking machine fame, has been engaged in perfecting his invention, the Gyro motor, since 1907. That he has succeeded may be judged by the recent 90-mile cross-country flight of aviator Peck, in a Gyro motored biplane.

While the Gyro embodies the same principles of revolving cylinders and pistons as the Gnome motors, there has been a general improvement and reorganization of details throughout.

Each cylinder is machined out of three per cent nickel steel tubular forging weighing nearly forty pounds, the metal being removed until the finished cylinder weighs about six and one-half pounds. The wall of the cylinder is provided on the outside with radiating surfaces in the form of radiating fins disposed in helicoid or screwlike formation around the cylinders.

The outer shell of the pistons is of converted iron of special elastic formation which conforms to any change of size or shape that may occur in the cylinder. The head portion of the piston consists mainly of the intake valve support, which carries the wrist-pin and the intake valve with its operative mechanism. The master connecting rod to which all the others are articulated, carries the ball bearings by which the entire set of connecting rods forming the spider are connected to the stationary pin.

The intake valves are located in the pistons. They are mechanically operated by a special movement comprising only two parts—a counterbalancing member and a single operating member pivoted on the connecting rod. This device depends for its action upon the centrifugal force of the rapidly moving parts, the direction in which the force shall act for opening or closing the valve depending upon the movement and angular position of the connecting rod. This movement insures full opening of the valve during practically the

50-HORSEPOWER GYRO MOTOR.

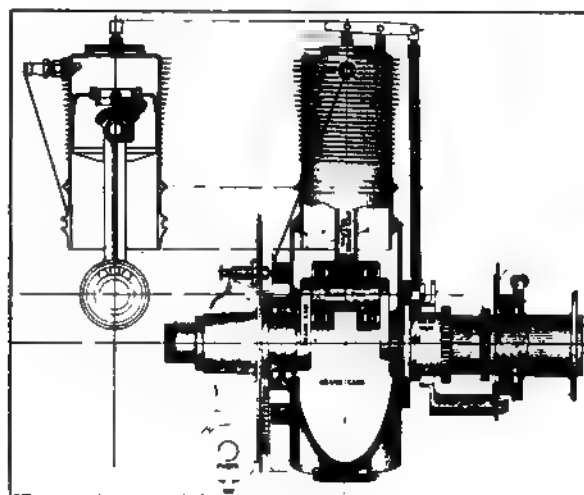
It consist broadly of two parts—a rigid non-rotating part and a revolving part. In the customary type of gasoline motor the revolving part is the crankshaft and flywheel, the cylinders and crankcase being fixed. In the Gyro this is reversed, the only fixed and stationary parts being the crankshaft with its necessary mountings and supports.

A salient feature of revolving cylinder motors is that, with the exception of a slight deviation due to the difference in the angular position of the piston rods, neither cylinders nor pistons have any reciprocating motion, but simply revolve each around a separate center. The motions of both are continuous as in a turbine. This insures freedom from vibration with resulting long life of parts, steady running and continuity of power.

It is this feature of the parts revolving about two different centers that brings the pistons first near the head end of the cylinders and then to the opposite end as the two parts revolve about their respective centers. It gives the same piston displacement as would a reciprocating motion, but it is accomplished without shock or any reversal of motion in the moving parts.

The crankshaft is machined out from a chrome nickel steel forging. The shaft is bored out hollow and forms the conduit through which the fuel and oil are brought to the interior of the crankcase and to the cylinders.

Forming the central portion of the engine, the crankcase of Vanadium steel provides a mixing chamber for the fuel and air. This case is divided into two halves which are bolted together. The exterior of this case carries the exhaust valve operating mechanism and the ignition distributor. By removing the bolts which hold the crankcase together the entire interior and practically all working parts of the engine are laid bare.



SECTION OF CRANKCASE AND CYLINDER.

entire suction stroke with prompt closing at the end

The cylinders are provided with two separate exhausts for the burnt gases. Auxiliary exhaust ports are provided in the cylinder walls, to be uncovered by the piston at the end of its stroke. The greater part of the exhaust passes out here. These ports are formed through a ring section turned on the cylinder to allow ample material between the closely spaced holes. The peculiar feature of these parts is that they are not bored radially through the cylinder wall, but are inclined backward and outward toward the crankcase. This makes the ports of considerable length through the thickened wall and their inclined position makes it impossible for the cylinder oil to escape through them by centrifugal force.

The main exhaust valves in the center of the cylinder heads are operated by levers and push rods connected with a simple and accessible cam mechanism exterior to the crankcase. A single cam ring usually operates the entire set of valves.

Ignition is effected by a high-tension magneto of standard make. The oil and fuel supply is maintained by a combination positive pump which measures the supply and feeds in exact proportion to the speed and requirement of the motor.

Both the oil and gasoline enter the crankcase by way of the shaft and mingle freely together as in other motors. Un-

Continued on page 388.

E. PERCY NOEL, Founder-Editor

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The Editor is pleased to consider MS and photographs for publication, but only material that is likely to prove of interest to the readers of Aero. The Editor cannot undertake to answer technical inquiries except in the columns of Aero.

DEMONSTRATION OF RELIABILITY

Followers of aviation know the capabilities of the aeroplane and in their minds there is no doubt as to the future, but the general public has not yet grasped the idea, and thinks of the future 10 years hence, instead of this summer or next spring. Men of the type which took up the automobile before the utility of that vehicle was the chief consideration have in many cases a lurking fear of the aeroplane and in others hold that it is unreliable.

These opinions must be changed before progress can be much swifter than it is at present. They con-

stitute a prejudice which stands as a strong barrier against the advancement which every enthusiast desires. There are many ways and means that might be considered to break down this antagonistic defense, but to be effective the methods must take the form of demonstrations.

At the present time maudlin interest excited by spectacular events will not attract the class of people whom it is now necessary to interest. A race, between cities, for instance, involves too many hazards—because of the very nature of the event—to be the kind of demonstration that will incline the normal man towards flying for pleasure. By the same argument great speed will not be of importance to the man who may be considering aeroplaning as an agreeable pastime.

He would be a self-confident prophet indeed who would dictate this year the best kind of demonstration for aviation in general. There is no doubt that government interest played an important part in the rise of the aeroplane industry in France and the organization military trials by the United States Army would surely prove an efficient stimulus in this country, even if the amount of money involved were less than in the trials of the French Army last year. But manufacturers of aeroplanes can do little more than wish for such an opportunity as was afforded the French makers.

Army trials would be first of all a demonstration of ability and reliability, neither adequate without the other, so we logically come to the conclusion that a demonstration of reliability is one of the important events needed now.

A tour over country suitable for good landings, with a slow running schedule in miles per hour, and comparatively short distances between controls, with penalizations for breakages and replacements, even penalties for arriving late or early at controls, might well be the nucleus of the plan. If it is true that what the public needs is a demonstration of reliability under every-day conditions, rather than spectacular manifestations, the regulations should be easy to follow successfully so that the greatest number of contestants could finish the tour creditably.

Such a tour does not require the offer of large purses, provided manufacturers can see that upon some such events this year depends the actual sale of aeroplanes to the people whom it is now necessary to reach. If, on the other hand, competition in such a tour proved costly, the results would undoubtedly make it inexpensive.

Certainly this is one of the crying needs—demonstration of reliability—and now is the time.

AMONG THE AVIATORS

(CHARLES E. HORTON OF FLINT, MICH.)

Charles E. Horton, of Flint, Mich., a recent pupil of George Beatty, expects to fly for his pilot's license soon. He has already flown about four hours, doing unusually well in strong winds.

Earle L. Ovington is putting in a busy winter lecturing before various organizations in New England on the progress of aviation. His principal lecture in this city was given last week before the assembled student body of the Massachusetts Institute of Technology, his alma mater. Ovington prophesies an all-metal aeroplane and declares that the trans-Atlantic flight is not impracticable, providing proper arrangements for government assistance are made prior to the start.

Under date of January 16, the following information comes from Hugh Robinson, the Curtiss aviator in Paris, "We arrived O. K. and fly here soon. Went to Issy yesterday and saw two flights. Met Simon also. He is pilot for Bleriot now. More later. Fine weather."

Preparations for a wonderfully active year are noted by the New York Aeronautical Supply Company, which is at present working double shifts to keep up with its orders. The sale of three Curtiss-type to a South American army, to be equipped with Roberts motors and used for scouting purposes, is reported. The company's new catalogue will be issued about March 1.

A report from Milwaukee, Wis., states that John K. Lueck has become a full-fledged aviator and contemplates a flight across Lake Michigan.

An organization in Denver, Colo., called the American Federation of Aviators, is said to be arranging a race from Los Angeles to Denver.

Frank Bryant, in an eight-cylinder standard Curtiss, and Roy Francis, in an eight-cylinder Hall-Scott motored Gage biplane, flew at Redding, Cal., January 11 and January 14—had a fairly good attendance—about 1,000 paid admissions each day and 5,000 looking on from the outside. They complained about bad landing on account of the crowd swarming all over the field. Each made two twenty minute flights each day. Bryant will continue his tests with the Converse automatic stability device in the near future. He has made some very good flights with it at the Alameda Marshes. Bryant and Francis gave several exhibitions January 27 and 28, the former in a Curtiss and the latter in a Page-Wright machine. Francis flew 15 miles over the surrounding country in one flight, and later both men were in the air for half an hour, circling the city.

L. Richardson, the Winona, N. Y., aviator, will fly a Curtiss-type machine equipped with a Smith eight-cylinder motor during the coming season.

P. C. Gribble & Ivan R. Gates, flying a Maximotor propelled Green biplane, have dissolved partnership. Gribble intends to enter the Curtiss Aviation School, San Diego.

Ivan R. Gates has joined the Diddier Maason camp in the capacity of manager. A new 45-foot Maason-Gnome biplane, from parts furnished by the California Aviation Company, is being built. The plane will be headless, double covered with Goodyear No. 10. The machine will be made to carry three passengers, and capable of staying in the air for 10 hours. It will be finished before the San Francisco meet, which starts February 22. When completed Maason will start on a San Francisco to Los Angeles trip, advertising the World's Fair, 1915.

Fred G. Bells, Bath, N. Y., will during the coming season fly a Curtiss headless biplane.

John Legrieve, with an Elbridge propelled, Bleriot-type monoplane, smashed his machine beyond repair at the Spokane Fair. He has ordered a new machine from the California Aviation Company of San Francisco.

Mrs. Henry Payne Whitney, of New York, who is known as a sculptor of ability, has in evolution a group of statuary which will form the model for the trophy which her husband has offered for naval aviation contests.

Earl Standt, of Erie, Pa., flew 25 minutes, on January 25. He circled Presque Isle Bay at a good altitude and later went out over Lake Erie. On a second flight he carried a passenger.

On February 2 and 3, Charles Walsh, Curtiss aviator, flew at Sherman, Tex., on a contract with the Young Men's Business Association.

The flying scheduled for Gainesville, Tex., has been postponed until February 14 and 15.

George Rieflin, Rochester, N. Y., is building a passenger-carrying biplane which he expects to have completed sometime during May.

Jesse Seligman, who flies a Moisant monoplane, arrived at Colon, Panama, January 17, to arrange for his flight across the Isthmus. Seligman has been flying at Kingston, Jamaica and in Central America. At San Jose, 30,000 people saw him fly in a 30-mile an hour wind.

HOT SPRINGS TO HAVE EXHIBITION

Hot Springs, Ark., February 4.—The presence here of A. B. Lambert, former president of the Aero Club of St. Louis, is considered as largely responsible for arrangements that have been made to hold a 10-day meet at Whittington Park, beginning February 12. It is not to be an open meet. W. F. Osborne is in the city with one monoplane, to take part, and five additional machines are said to be on the way.

KANSAS UNIVERSITY TAKES UP AVIATION

Lawrence, Kas., January 29.—The study of aeronautics has been taken up at the University of Kansas, under the direction of Professor P. F. Walker of the department of mechanical engineering.

"I do not believe that much will be done in the way of establishing advanced college courses in aeronautics," said Professor Walker today. "All engineering work in the best universities and technical schools is becoming more and more generalized, and the study of aeronautics is necessarily a part of the course in mechanical engineering."

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BULLETIN

Visit the Club Room

All members of the Aero Club who have not yet visited the club room should not miss the opportunity which is open to them daily except Sunday. All of the leading aeronautical publications of the world are on the library table, there is a desk and stationery for letter-writing, comfortable chairs for a quiet smoke and talk with a fellow enthusiast, a telephone on the desk for unlimited use.

This is a good place for club members to meet before or after luncheon, or before going home at night. The quarters are open until 8 p. m. and, of course, as late as necessary on special occasions.

Club Quarters Opened

Although a stormy night kept down the attendance, it was an enthusiastic gathering that met at the club quarters Thursday night and discussed the uses of various instruments for the aviator and aeronaut. William F. Assmann, the club balloon pilot, who will compete with J. H. Wade, of Cleveland, O., in a match race from San Antonio this month, brought several instruments that were unfamiliar to the aviation enthusiasts present.

It was the consensus of opinion of those present that meetings should be held at least once a month, if not every two weeks, which shall be open to all members of the club.

The technical committee is preparing an interesting program for the next few months which will be announced soon.

ARMY MEN TEST BENOIST PLANE

Kinloch, St. Louis, January 30.—Some extra interest was added to the flying at Kinloch last week by the visit of Lieut. Colonel John J. Dooley, N. U. S. M., and Major Frank R. Lang of the recruiting office, U. S. A. Colonel Dooley had several rides in the Benoist biplane with Antony Jannus, instructor of the Benoist school, in which he had the new machine put through many of the tests required at the recent French military trials.

Colonel Dooley required Jannus to run the machine at practically full speed across a rough piece of ground, part of which was a last summer's cornfield, well frozen. Afterwards the machine was taken off the ground under the same rough conditions. After this the machine was tried out, carrying Colonel Dooley, in a 20-mile wind, very gusty and exceedingly cold. Jannus had no trouble in convincing not only Colonel Dooley, but also every one else on the ground that the machine would negotiate very high winds readily. In other tests Jannus was able to get the machine off the ground with a passenger in less than 100 feet.

Major Lang made arrangements to practice marksmanship

from the observers' seat in the Benoist and expects to take this up next week.

One mean accident was the only thing to break the monotony at Kinloch as the weather was too bad most of the time for any teaching. Edward Korn went out in considerable wind with Joe Waldron as a passenger and was caught by a gust while about 20 feet from the ground. Only very clever handling prevented landing on a fence. As it was, Korn managed to turn into the wind and headed into the fence so

MAJOR LANG AND LIEUT. COLONEL DOOLEY.

that practically no damage was done the plane.

Billy B. Van and the Beaumont Sisters were entertained by some exhibition flying by Jannus in the Benoist plane on Saturday. Van was unable to take a ride, as his management threatened to sue him for \$5,000 if he took the risk.

On the bad days Benoist students have been improving each shining minute by studying the structure of the machines as they come through the shop. Some have also availed themselves of the classes in engines so that all are busy and contented, knowing that sunshine follows rain.

HAS HYDRO EXHIBIT AT BOAT SHOW

Boston, Mass., February 3.—The only aeronautical concern exhibiting at the Ninth National Motor Boat and Engine Show, closing in Mechanics Building tonight, was the Burgess Company and Curtiss. In their space at the head of the balcony stairs, was one of the hydroplanes used on the new hydroaeroplane, the rudder of the biplane flown by Atwood from St. Louis to New York, a control system and several striking photographs of the hydroaeroplane in flight. Clifford W. Webster was in charge of the exhibit, and was kept busy explaining to the motor boat enthusiasts the pleasures of the land, air and water vehicles.

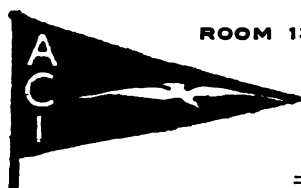
DECORATION DAY MEET SCHEDULED

Boston, Mass., February 3.—President Wesley A. Gove of the New England Aviation Company, today made announcement of a combination aeroplane and automobile race meet at Rockingham Park, Salem, N. H., on Decoration Day. Lincoln Beachey, the star of the Curtiss fliers, has been contracted for, while at least one other aviator will compete, the number possibly being swelled to half-a-dozen. Amateur and professional automobile racers will also compete over the track.

WEBSTER WILL GO TO ORMOND

Marblehead, Mass., February 3.—Clifford W. Webster will leave early next week for Ormond, Fla., where the second Burgess Company & Curtiss school in the south will be established. He will take with him a hydroaeroplane and will instruct several pupils at the southern resort. No flying has been done here for several weeks, since Page and Burgess are in the south and Webster has been busy at the Boston Motor Boat Show.

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BULLETIN

To the Members:

The dinner reception in honor of the second anniversary of the Aero Club of Illinois takes place February 10, Saturday evening, at 6:30 o'clock, in the Auditorium Hotel on the same floor as the club headquarters. If possible for them to attend, Gen. Baden-Powell and Charles Y. Knight will be guests of honor.

HAROLD W. ROBBINS,
Secretary.

Session of Model Division

A special session of the Model Division of the Aero Club of Illinois is called for Saturday morning, February 10, at 10 o'clock in the Auditorium South Parlor, at which the outline of work and regulations of the organization formulated as a result of the committee meeting Saturday the 3rd inst. will be submitted.

There will be demonstrations of model construction, suggestions for design, and estimates of material and cost.

The requirements of membership will be defined. A schedule of meetings will be considered. Names of prospective contestants should be communicated at once.

HAROLD W. ROBBINS,
Secretary.

Junior Membership

At a meeting of the special committee to consider junior members and other connections with the Aero Club of Illinois, in session Friday evening, February 2, there were present: James S. Stephens, R. E. Ackley, S. V. James, J. B. Lund, G. F. Sexton, W. B. Stout and H. W. Robbins.

The objects desired to be obtained by the Aeronautical League of Chicago as stated in its articles of association were discussed and an agreement to secure those results was tentatively made.

HAROLD W. ROBBINS,
Secretary.

Company "C" Captain Going South

A. B. Moler, Captain of Company "C", starts on a trip for Mexico City, February 6, and promises to return with a membership application of the American Counsel and several other of the American Colony in that Republic. There are many aviation enthusiasts from that district who have already received sample copies of the AERO BULLETIN and who desire it sent regularly. As this publication accompanies the membership, there is sure to be a goodly number of applications from that territory. Mr. Moler expects to visit the flying fields in New Orleans and San Antonio on his way.

Parseval or Zodiac

According to reports already published in the daily press and elsewhere, the non-rigid, dirigible, passenger-carrying

Zodiac, of French manufacture, brought to America by Horace B. Wild, is intended to be used for sight-seeing purposes across country and in addition may be employed for advertising displays over large centers of population.

W. A. Blouck, Chicago engineer and well-known dirigible balloon enthusiast, is prepared to aggressively push "sport in the air," as he says, by securing delivery of a 20-passenger dirigible built by the Parseval Company, Germany, and by insuring the operation of passenger and other service along lines already thoroughly worked out by the foreign companies, for which he has complete data.

"A machine of this capacity is requisite if the advertising branch of the business is to be handled practically," stated Blouck last Saturday in Chicago. "To display advertising at night by projectors hung from the car, there must be spaces at least 20 by 60 feet on the sides of the gas bag to be distinguished readily at a 500-foot elevation. The cost, while running into many thousands of dollars, including the machine, its hangar, the generating plant, operation, etc., would easily be eclipsed by the income from passenger carrying during the day and display advertising at night."

This field will undoubtedly see marked development this year. Its possibilities, based on a practical system of operation, are enormous and popular support may be counted upon to be forthcoming as required. In Europe the Schwaben is making regular trips in conjunction with the Hamburg-American Line and similar services are in use in other connections.

Gordon-Bennett and Grand Circuit

When the representative of the Aero Club of America made an appointment by telegraph and telephone with the president of the Aero Club of Illinois this past week to look over the possible locations for the Gordon Bennett cup race at Chicago, the revised Federation Aeronautique International rulings covering the course had not been submitted so that following their later arrival by mail the proposed inspection and selection had to be postponed until a later date to allow of more careful preliminary consideration of available grounds, of which there may be many within convenient radius.

The transportation problem, as always, has to be carefully taken into account, but this locality is famous for such facilities, so the solution should not be too difficult.

The foreign regulations seem to have been devised largely with the European possibilities in mind, and upon second consideration it would seem inadvisable if not impracticable that they be adhered to rigidly in this country. For instance, as presented, they specify that "the surface of the track anywhere must be of such nature that an automobile may run over it." In the 1912 Gordon Bennett race, the tracks minimum perimeter must be five kilometers (3.1 miles), its width should be 200 meters, with an additional neutral space outside of 200 meters and an infield not narrower than 300 meters. The cup race distance is 200 kilometers (124.2 miles). No angle of the course may be less than a right-angle.

A very interesting prospect connected with the Gordon Bennett race is the "Grand Circuit" of 1,500 miles projected to include cities of importance within a range of several hundred miles of the start and finish.

Beginning at Chicago, this would probably include such controls as Davenport or Dubuque, Omaha, Kansas City, St. Louis, Indianapolis, Dayton, Toledo, Detroit, South Bend, etc.

It will be required that such cities as are included contribute to the general purse of \$50,000, to be hung up for the participants in the endurance contest.

AERODROME TO ACCOMMODATE HYDROS

New York, February 3.—As soon as the frost gets out of the ground, work will be commenced on the flying ground of the Aeronautical Society at Bergen Beach, Jamaica Bay. Experiments with hydroaeroplanes will be specially encouraged at this aerodrome. Twenty-five applications for hangar space have already been received by the society.

Model Aeroplanes

Aviation Association of America

Individuals wishing to join and clubs desiring to affiliate with the Aviation Association of America are requested to communicate at once with the Temporary Chairman, Aviation Association of America, 606 Columbia Building, St. Louis, Mo. There are no dues. The object of the association is to encourage and regulate model and kite flying and gliding in America. Each member properly qualified will be furnished with the lapel emblem of the club. Notices of meetings of affiliated clubs will be published in this column. Additional names of individuals desiring to organize affiliated clubs are published below:

NEW YORK.

Ogdensburg—Fred Sharples, Proctor avenue.

COLORADO.

Fort Collins—Hugh Winslow, 730 W. Ohio.

OHIO.

Akron—Howard Beebe, 260 Rockwell Court.

Findlay—Donald Stem, 818 Maple avenue.

Columbus—Lloyd A. Pixley, 473 Linwood avenue.

ILLINOIS.

East St. Louis—C. H. Lawrence, 2707 Summit avenue.

Chicago—Herbert Owen, 1048 W. Robey.

Chicago—Erwin Klinshmann, 1446 Turner avenue.

KANSAS.

Olathe—R. S. Herman, National Hotel.

MASSACHUSETTS.

Middleboro—Alfred L. Harvey, 41 North street.

INDIANA.

Independence—Leroy Shawcross, R. R. No. 1.

TEXAS.

Alvin—Brazoria Co., Frank F. Fluette.

Temple—C. D. Myers, 204 W. French avenue.

PENNSYLVANIA.

Philadelphia—John MacDonald, 1514 Arch street.

CALIFORNIA.

Oakland—Oakland Amateur Aero Club, 21st and Telegraph.

Terre Haute Club Schedules Meet

The Aero Club of Terre Haute (Ind.) will hold its first model aeroplane meet, February 9. Victor L. Tyler, 1932 North 9th street, Terre Haute, Ind., is the secretary, who will furnish any information desired by Terre Haute enthusiasts.

Pittsfield Enthusiasts Rallying

Although organization will not be completed until spring, preliminary steps have already been taken to bring into existence an affiliated club at Pittsfield, Mass. Charles B. Olsen, 10 Pond street, Pittsfield, Mass., is the organizer.

"Airmen of the Future" Pleases

William P. Dean, the model prize winner of England in 1910, advises that the Schenectady (N. Y.) *Gazette* is reprinting the editorial "The Airmen of the Future," published in *AERO*, Vol. III, No. 16, in order to encourage young men in that district who are not already interested in aviation. Several requests have been received for copies of this issue for use in various ways to promote interest. Additional copies may be had upon application to the Aero Publication Company, enclosing 10 cents for each copy desired.

Brooklyn Organization Meets

The Cypress Hills (Brooklyn, N. Y.) Model Aeroplane Club held its organization meeting, January 16. The following officers were elected: Harry Eckhardt, president; N. Metzger, vice-president; J. F. McMahon, secretary; Lester Ness, treasurer. The secretary's address is 3321 Fulton street, Brooklyn, New York.

Birmingham Fliers Temporarily Organized

Merrit B. Greene, R. F. D. No. 6, has temporarily organized a club in Birmingham, Ala., which shall be affiliated with the Aviation Association of America. Constitution and by-laws will be adopted at the next meeting.

CORRESPONDENCE

[1042] Bell, Chicago.—The term "drift" as used in aeronautics, was first applied by Prof. Langley to the force tending to drift an aeroplane surface backwards, when it is placed in an air current. Practically speaking, the drift of any aeroplane surface is the head resistance that the surface meets with owing to its advance through the air. The camber of an aeroplane surface is the distance from the chord line to the curved surface of the underside of the wing. See Fig. 6, page 317, *AERO*, Vol. III, No. 16. Locating the center of gravity and balancing an aeroplane will be treated on in the near future in the columns of *AERO*. The center of pressure of any aeroplane surface is a matter of experiment, and not mathematics. A camber of one in 13.5 is the relationship of the length of the chord to the camber. If the breadth of a wing was 13.5 feet, then the maximum camber would be one foot. The angle of attack and the angle of incidence are used in the same way and have the same meaning. The exact measurements of the 1912-Curtiss rib curve are not available.

[1043] H. R. D., Pasco, Wash.—In regard to insurance for aviators, see question No. 1015, *AERO*, Vol. III, No. 16.

[1044] W. A., Custer, Okla.—There are a number of motors on the market that will fly an aeroplane which are sold at less than \$500. As a rule they are not powerful enough for biplanes. A motor suitable for the Wright machine will cost at least \$800. Money has been made in the exhibition business; also lost.

[1045] E. J. D., Philadelphia, Pa.—The Bleriot monoplane frame is trussed with special aviation steel wire, the gauge of which varies from No. 9 at the front end to No. 14 at the rear. Farman-type of running gear should be braced with at least No. 9 wire or one-eighth inch steel cable.

[1046] H. B. C., Chicago.—The Farman-type wing is not truly parabolic. The trailing edge is tangent to the curve for about 20 per cent of the width. The efficiency of the double-propeller drive of the Wright machine is in the neighborhood of 75 per cent, that of the Farman direct-connected drive 50 per cent.

[1043] L. B. S., Mesa, Arizona.—If the machine is a duplicate of the Breguet, it ought to be successful, but if many changes have been made it will take quite a bit of time to experiment. More mistakes have been made by builders of duplicates of standard machines "improving" the design than from any other source.

Supplying the "Unknown Cause"

To the Editor of *AERO*;

Apropos of Mr. Cal. P. Rodgers' theory that many aeroplane accidents have been caused by the aviators falling asleep, as he claims was the reason for his own recent hard tumble.

Nearly every issue of the aeronautic magazines of the world contains an article bringing forward a new theory for the cause of the many unexplained accidents to aeroplanes. Each of these theories seem to fit the particular case cited, but when attempt is made to apply any one of these new theories to all of the "unknown cause" accidents, it invariably falls far short of an explanation.

In each of the fatal accidents the general conditions were varied. In some instances the machines, at the time of the accidents, were rising from the ground, while in others they were just landing; in others the machines were volplaning, some were struck when turning to right or left, and some were twisted head downwards when flying on an apparently even keel. The aeroplanes themselves varied, covering every known form of biplane and monoplane. Only one condition alone was present in every "unknown cause" accident, viz., the machine was either driven by a revolving motor or a motor having a high velocity flywheel, and the aeroplanes behaved exactly alike in every accident! Does it not seem plausible that the Brooke theory of gyroscopic action in the motors is the correct solution after all?

RALPH M. PEARSON.



1,014,239, January 9, 1912.—Herman Ludtke, Ottawa, Ill. A flying machine, comprising a frame, a main supporting frame therefor, a reciprocable plane, slidably supported by the frame and having horizontally extending guide-ways formed thereon, a wheel rotatably mounted in the frame, a wrist member adjustably mounted on the wheel and projecting therefrom into the guide-ways, means for rotating the wheel, and means for adjusting the position of the wrist member while the wheel is rotating.

1,014,276, January 9, 1912.—John W. Wolfe, Shenandoah, Iowa. A flying machine comprising a frame, a longitudinal row of vertical cylinders carried thereby, pistons in said cylinders, said pistons being provided with openings, valves slidable in said openings and provided with ribs for spacing the same from the edges of said openings, said valves being provided with flanged ends that overlap said openings, springs carried by said pistons and engaging said valves, and means for reciprocating said pistons.

1,014,369, January 9, 1912.—John P. Buengers, Racine, Wis. A kite, center-piece, comprising a circular disk of sheet metal, equally spaced struck-up loops formed in said disk adjacent the periphery thereof and a series of centrally disposed sockets stamped in the center of said disk and arranged in radial alignment with said loops.

1,014,430, January 9, 1912.—Karoly Zuggo, South Lorain, Ohio. An aeroplane embodying an upper V-shaped frame, a lower V-shaped frame connected to said V-shaped frame, rear rudders carried by the upper frame, front rudders supported by said upper frame, a plane carried by said frame, a plurality of propellers carried by said frame, motors carried by said upper frame and adapted to operate said propellers, a suitable source of electrical energy carried by said lower frame, and means carried by said lower frame and including drums adapted to control the operation of said rudders.

1,014,514, January 9, 1912.—John H. Pierce, Oakland, Cal. A flying machine comprising a body portion, aerial propellers, a water propeller, a toggle bracket mounted upon said body portion, said toggle bracket comprising a pair of upper side bars, a bolt connecting the lower end of said bars, a pair of lower side bars mounted upon said bolt sleeve slidably mounted upon said water propeller shaft and pivotally mounted between said lower side bars, a rod mounted upon said bolt, an operating lever pivotally connected with said rod, and body portion and adapted to move said rod to vertically adjust said water propeller, and operating means for said propellers.

1,014,619, January 9, 1912.—Henry Laurens Call, Girard, Kans. A propeller, comprising a pair of oppositely projecting blades bifurcated at their inner ends, means extending longitudinally of the blades and projecting into said bifurcations, and plates secured to the blades and bridging said bifurcations and provided with longitudinally extending bearings projecting into said bifurcations and pivotally embracing said means.

1,014,643, January 16, 1912.—John J. Donnelly, Denver, Colo. A helicopter comprising a car, a framework hinged to the car so that the same may be tilted below the bottom of the car, and a flexible device passing around the car and connected at its opposite extremities in operative relation with the framework.

1,014,730, January 16, 1912.—John W. Way, Edgeworth, Pa. A propeller blade of curved contour in cross-section, the concave surface thereof being provided with a rearwardly diverging air-retarding projection extending longitudinally of the blade.

1,014,731, January 16, 1912.—John W. Way, Edgeworth, Pa. A sustaining wing for an aeroplane, said wing being of curved contour and having a continuity of its concave surface interrupted at a point rearwardly of but adjacent to its anterior edge by a projection which extends outwardly from

the said concave surface, said projection forming with the concave surface a constantly open pocket.

1,014,763, January 16, 1912.—Charles Albert Long, Spokane, Wash. An airship having a body member with longitudinal series of planes on opposite sides thereof defining like series of air channels, said air channels having intake openings adjacent the top of the ship and above all obstructions of the flow of air into them and having their discharge openings adjacent the bottom of the ship, each air channel having an air-propelling and compressing means therein.

1,014,802, January 16, 1912.—Otto W. Boche, Meriden, Conn. A flying machine comprising a frame and a motor carried thereby, two propellers carried at opposite sides of the forward end and a rudder at the rear end, a wing carried at each side of the frame, said wings each having a segmental rack at its inner end, and means connected with the motor for driving the propellers and including gears engaging with the racks on the wings whereby the wings may be moved forward or backward.

1,014,857, January 16, 1912.—Geo. Seofert, Northampton, Pa. A flying machine, the combination with the platform, of a motor, centrally supported oscillating frames operated by said motor, valved wings carried by said frames on opposite sides of the support, and means for adjusting the vertical angle of said wings in the frames.

1,014,953, January 16, 1912.—Ernest W. Davis, Chicago, Ill. An aerial toy comprising an air propeller having a slot in the center thereof, and a single piece of wire adapted to be rotated between the hands, and bent at one end to provide two offset portions insertible within said slot.

1,015,045, January 16, 1912.—Geo. H. Loose, San Francisco, Cal. A flying machine having a controlling plane adapted to be presented at a fixed angle either above or below the direction of travel of the machine, and means for augmenting and diminishing the functional surface of said controlling plane.

1,015,090, January 16, 1912.—Horace Leonard Short, Albert Eustace Short, and High Oswald Short, Battersea Park, London, England. An aeroplane having oblong through apertures, the length of said apertures being in a direction parallel with the direction of motion of the plane through the air, said apertures being located between the forward and rearward edges of said plane, oblong valves located within said apertures and adapted to be turned on their axes parallel with the length-way side walls of said apertures to open and close the latter, pivots on said valves located on the forward and rearward edges thereof, means in connection with said plane to support said pivots, an arm projecting from each valve and securely attached thereto, a rod pivoted to and connecting the free ends of said arms to turn said valves on said pivots, to open said apertures, a helical spring located between said rod and said main plane to pull said rod in a direction tending to keep the valves in their closed position.

1,015,150, January 16, 1912.—Louis Dobberty, Lake Charles, La. A flying machine having a supporting surface composed of laterally extending wings, each provided with a series of longitudinally extending pockets or channels, alternately increasing and diminishing in depth respectively towards the ends of the wings.

1,015,196, January 16, 1912.—Theodore T. Kryshtofovich, St. Louis, Mo. The combination with spaced conducting wires, and the means for supporting the same, of an aerial vehicle provided with an electric motor, a reel journaled on the vehicle and a cable winding on the reel and composed of two wires insulated from each other, a trolley running on the conductor wires and comprising a section for each wire and insulated from the other section, said trolley comprising a pair of spaced substantially parallel bars of conducting material, each bar being on the outer side of a conducting wire and having a downwardly and outwardly extending arm at each end, an inclined cross bar at the free end of each arm, the bars at each end of the trolley being inclined in the same direction and in the opposite direction to the bars at the other end, each of the said cross bars having an inwardly-extending lateral journal pin at each end, a disk on each pin, and a roller on each face of the disk and coaxial therewith and engaging the adjacent conducting wire, the outermost rollers of the trolley engaging beneath the wires and the innermost rollers engaging above the wires, cross bars connecting the first-named bars and a section of insulating material interposed in each cross bar intermediate its ends.

AERO MART

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FOR SALE.

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CASTINGS—Complete sets of castings for building the Bleriot as per AERO, Vol. II. Lynch Brothers, Aeronautic Engineers, 61 Wick Place, Youngstown, Ohio.

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Suggestions Made For Propeller Standardization

In response to a request from the Aeronautical Society in regard to the standardization of aeroplane propellers, Spencer Heath, of the American Propeller Company, has sent the following communication:

We think it would be a most excellent plan to standardize such features of the propeller as do not depend for their excellence upon the special skill in design or mode of construction, upon which the efficiency and general excellence of the propeller depends. To standardize these would be to put all propellers on a level as regards their excellence, and further development and improvement could only be made by departing from such standards as might be established.

Regarding the features which we think might be standardized to advantage, we would suggest that standard templates for hubbing be adopted by propeller makers in conjunction with engine builders, so that propellers of different manufacturers would be interchangeable on the same engine. A series of, perhaps, three templates could be established, based upon the A. L. A. M. rating of the engine. Speaking off-hand, we would say that for less than 25 horsepower, a bolt-circle of 3½ inches might be adopted, using six 3-8 inch, or 5-16 inch bolts; for 25 to 75 horsepower, the circle might be 4 inches or 4 1-4 inches with six 3-8 inch bolts. For greater than 75 horsepower, a circle of about 4½ inches, or 5 inches might be adopted with eight 3-8 inch bolts, or possibly six 7-16 inch bolts. The center hole might also be standardized, if the engine manufacturers can be gotten together on this. We do not think the center hole should ever be more than 2½ inches if it can be avoided.

The length of hub might also be standardized, and we would suggest 4½ inches to 4 3-4 inches as a suitable hub length for 25 to 75 horsepower; for less power a length of 3½ inches to 4 inches would probably be good.

The diameter of the propeller in relation to the size and weight of the entire machine, might also be a proper subject of standardization.

Many builders do not provide for a sufficient propeller diameter, not realizing that the efficiency depends very much upon the amount of traction obtained, and that this varies approximately as the square of the propeller diameter, hence the diameter should always be as large as possible (within reasonable limits) regardless of the power of the engine (the difference in pitch taking account of the available power and consequent flying speed).

With the advances that are being made is an experimental way to determine the flying head-resistance of different kinds and sizes of machines, at different speeds, it should be possible in the near future to lay down definite rules as to the number of square feet of area of propeller sweep per unit of head-resistance of the machine.

A most inviting field of calculation is opened up in this direction, which should be productive of the most useful engineering results leading, as it does, to the tabulating and diagraming of the necessary propeller diameters required for different percentages of efficiency as worked out from the flying thrust, or head-resistance at different speeds. As soon as this information becomes generally available, standards of propeller diameters will doubtless be definitely established.

Regarding competitive tests of propellers this, of course, to be of any value, would have to be carried on under practical flying conditions, and would require the same rules in regard to course, timing, entries, etc., that are necessary in competitive tests involving the entire flying equipment, including aviator. The machines, including power, weight, equipment, etc., should of course, be as nearly identical as possible, and provision should be made for alternating the aviators, as well as the propellers between the different machines for different events, so that each propeller could be tested on a different machine (of the same size and type) and with a different aviator, preferably of the same weight. No doubt such tests will ultimately become possible at some of the large flying fields.

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LOS ANGELES SUMMARIES

Continued from page 376

Carrying mail: Turpin, 8:05.
Passenger-carrying: Parmelee, 7:50 and 10:00.
Altitude for day: Parmelee, 5902; Beachey, 4832.

FRIDAY, JANUARY 26.

Amateur duration: Callan (Curtiss), 33:52; Crawford (Curtiss), 30:36 2-5; Holmes (Curtiss), 20:22 2-5; Stevens (Gage biplane), 8:48 4-5.

Figure eight: L. Beachey, 1:17 1-5; Parmelee 1:33 2-5.

Five-mile handicap: Beachey, 7:14; Hoff, 7:31 4-5; Kearny, 7:43 4-5.

Free-for-all in rain: L. Beachey, 6:58; Parmelee, 8:04 1-5.

Altitude: Beachey, 3312; Parmelee, 3230; Oncke, 2622.

Duration: Cooke, 2:30:00; Fish, 1:55:27; L. Beachey, 52:05; Turpin, 47:30; Parmelee, 40:30; Gill, 22:45; Martin, 15:25; H. Beachey, 13:25; Stites, 13:20; Hoff, 9:45; Scott, 3:25.

SATURDAY, JANUARY 27.

Amateur duration: Holmes, 9:20; Crawford, 7:00.

Daily duration: Fish, 1:50:10; (penalized 20 minutes for forcing Parmelee over grandstand) 1:30:10; L. Beachey, 56:00; Parmelee, 51:50; Martin, 49:30; Kearny, 33:25; Cooke, 31:40; Hoff, 24:25; H. Beachey, 13:25; Turpin, 5:00.

Five-mile handicap: L. Beachey, 7:13 4-5; Parmelee, 7:20; Hoff, 8:3 1-5; Kearny, 8:33 4-5; H. Beachey, 9:3 3-5; Martin disqualified for exceeding five per cent of test speed.

Free-for-all: Beachey, 7:28 1-5; Hoff, 8:35 3-5; Parmelee, 8:50 2-5.

Carrying mail: Martin.

Altitude: L. Beachey, 3240; Martin, 5291; Parmelee, 2924; Cooke, 1753.

SUNDAY, JANUARY 28.

Amateur duration: H. Crawford, 33:30; Stevens, 26:40; Callan, 23:20; Carlstrom, 40:25; Holmes, 40:15.

Duration: Cooke, 2:30:00; Stites, 1:35:00; L. Beachey, 1:20:00; Fish, 1:06:19; Kearny, 1:02:40; Martin, 55:25; Parmelee, 52:50 Hoff, 31:15; Turpin, 29:55; Miss Scott, 13:15; H. Beachey, 5:00.

International race: L. Beachey, 5:54 2-5; Hoff, 6:31 2-5; Kearny, 6:53 3-5; Parmelee, 7:00.

Five-mile handicap: Parmelee, 7:07 3-5; L. Beachey, 7:07 4-5; Hoff, 7:16 3-5; Kearny, 7:18 1-5.

Figure eight: Beachey, 1:07 2-5; Parmelee, 1:15 2-5.

Free-for-all: L. Beachey, 6:58 1-5; Hoff, 7:40 2-5; Parmelee, 8:13 1-5; Kearny, 8:30 1-5.

Special altitude (Glide motor off): Beachey, 36:05.

Special exhibition flight: L. Beachey, 11:40.

Wireless: Parmelee, 12:35.

Aerial mail: Turpin, 5:50.

Mixed race (automobile, horse, aeroplane, man, etc.):
Turpin, 3:35.

GYRO ROTATING CYLINDER MOTOR DESCRIBED

Continued from page 379

der ordinary arrangements the greater portion of the cylinder oil passes through the intake valve out of the exhaust with but little opportunity of ever reaching the cylinder walls. The pistons, however, are fitted with a separating shield which carries the oil directly to the cylinder walls.

A valuable feature of the motor is its facility of cranking and starting. The exhaust mechanism is provided with a device whereby the closing of the exhaust valve may be delayed through any portion of all of the compression stroke. The motor is started with compression entirely released, in which condition it can be spun about its shaft with ease. By a simple stroke of a ratchet and lever, the motor can be given an initial spin from the aviator's seat. The spark and compression are then thrown in and the engine speeds up at once or gradually, according to the movement of the compression lever. This compression release lever plays an important part in starting, in a low running when desired, and in absolutely cutting off the power, regardless of charge or ignition.

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A. L. Smith, of Oroville, Cal., has recently completed an aeroplane which he will house in his barn at Palmero, Cal., while testing it.

It is understood that a Curtiss hydroaeroplane will be seen at the Beloit (Wis.) fair, August 27, 28 and 29.

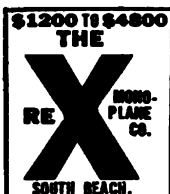
Charles A. Zornes, formerly a Benoist pupil, who has been building an aeroplane at Pasco, Wash., announces that it will be flown soon. He expects to open a school.

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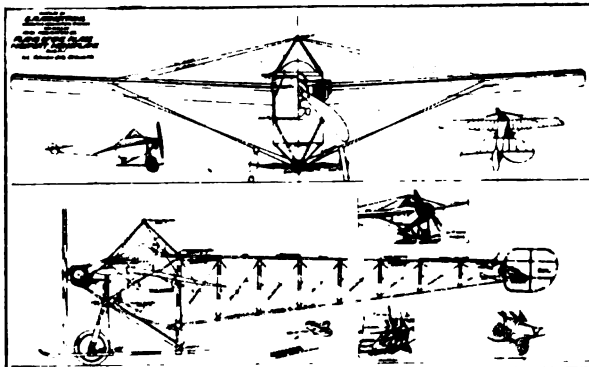
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AMERICAN-MADE HYDRO SURPRISES FRANCE

JUAN LES PINS, SCENE OF THE FIRST AMERICAN HYDROAEROPLANE FLIGHTS ABROAD.

According to cables from Nice, France, received February 9, the American aviator Hugh Robinson, with Louis Paulhan as a passenger, made a flight from the Mediterranean that day of 40 minutes duration, in demonstration of the Navy type of Curtiss hydroaeroplane. Several French Navy officers witnessed the flight and expressed themselves as surprised at the ease with which the machine arose from and alighted upon the water.

Subsequent to the flight of Robinson with Paulhan as a passenger, the latter made a 15 minute flight operating the machine alone. He handled it with ease, and astonished the spectators with his maneuvers in the air and on the water after so brief an acquaintance with the Curtiss system of control.

The first successful demonstration of the machine in Europe, was made by Robinson, February 6. The machine used was the one recently sold by the Curtiss Company to Paulhan, the French aviator and aeroplane builder. Robinson cabled the Curtiss office in New York City regarding his flights as follows:

"I made the first flight today in demonstrating the hydro purchased by Paulhan, at Juan les Pins, near Nice. The demonstration was a perfect success, and in the course of a 30-minute flight I alighted upon the water at least a dozen times and arose with perfect ease after each landing. The water was rough, many waves being as high as four feet. In spite of this, however, the alighting and starting was made without difficulty or special incident. The flights attracted a great crowd and the enthusiasm displayed was remarkable. I have flown in many American cities, but nowhere did the enthusiasm of the people equal that of the

crowds which witnessed the demonstration of the hydro here. Further demonstrations will be made at Nice, Monte Carlo and elsewhere. Great interest displayed in the machine."

Robinson has contracted to remain at Juan les Pins until March 1. His address while abroad is care American Express Company, Paris.

According to cable reports from Nice, France, February 10, Robinson met with a mash-up while maneuvering in a high wind and over a rough sea.

A banquet was given at the Casino Juan les Pins for Robinson and Louis Paulhan. It was arranged that at the conclusion of the banquet both men should fly with passengers over the bay. An enormous crowd gathered on the shore. The wind was very violent and a heavy sea was running. Other aviators thought flying impossible, but Robinson decided on a flight.

After gliding over the surface of the sea for a hundred yards the hydroaeroplane rose 250 feet and described two large circles above the bay. Robinson then turned back, intending to alight on the sea. A strong wind from the rear interfered with the control and he was obliged to make too sudden a descent. As the floats of his aeroplane touched the water an immense wave caught the back of the machine and overturned it. Robinson was thrown forward and turned several somersaults, falling into the sea. The aviator supported himself till help came. He was not hurt. The pilot's seat is directly in the front of the machine, so he was thrown forward instead of being dragged beneath it. The aeroplane was partly wrecked, except the motor, which was not damaged.

ARMY BUYS FIVE MORE AEROPLANES

WASHINGTON, D. C., February 12. (Telegram.)—Orders for five more aeroplanes for the army aviation school were placed today by Brig. Gen. James Allen, chief officer of the signal corps. These machines are to be delivered at College Park, Md., some time in May or June.

Three of the five biplanes ordered are weight-lifting, specially constructed war machines from the Wright factory. They will be equipped with the latest Wright engines, six cylinders, 50-horsepower. Each machine is expected to carry two men and an additional weight of more than one hundred pounds. Another will come from the Wright factory and will be the fastest machine yet built by the pioneer inventors. It will be capable of flying at least sixty-five miles an hour. The other machine will be a Burgess-Wright, equipped with a 60-horsepower, six-cylinder motor, with a speed of fifty miles an hour.

Five machines are now at Augusta with the six aviators. The machines ordered to-day will bring the equipment at College Park this summer up to ten. Four new officers will be detailed for duty at College Park when the aviators return.

Brig. Gen. Allen intimated this morning that in the spring or early summer other machines would be purchased. Before the fiscal year ends, June 30, it is more than likely that fifteen machines will be under the command of the officers at College Park. One machine will be ordered next week to be sent to Fort Leavenworth, Kan., where an aviation school is to be established.

COFFYN IN HYDRO CIRCLES LIBERTY STATUE

NEW YORK, February 8.—Frank Coffyn has been making some striking demonstrations this week with his model B Wright biplane, which he has converted into a hydroaeroplane by fixing two pontoons of a steel-aluminum alloy in the place of the skids. In a number of spectacular flights over the lower Hudson River on Tuesday, he demonstrated that his marine aeroplane can skate as well as it can fly and swim.

Starting out from a raft at the foot of West 23rd Street on the first trip, Coffyn soon gathered headway over the surface of the water and made straight for at least half an acre of floating ice. Everybody thought Coffyn was in for a bad smash-up. But the aviator fooled the crowds, for the aeroplane, with its curved pontoons, climbed onto the ice with the greatest of ease, and increased its speed. Making a short turn while on the ice, Coffyn headed his machine dead into the wind and as he struck a stretch of open water rose into the air. He mounted rapidly to a height of 400 or 500 feet and before coming down made several large circles in the air. The trouble commenced when Coffyn got back to his raft. Desirous of getting a nearer view of the new craft the skippers of a number of tugs and ferryboats swarmed around the little raft and created such a disturbance in the water that they nearly succeeded in drowning Coffyn and his assistant and wrecking the hydroaeroplane.

The next day Coffyn took up a photographer and flew over Governor's Island, Ellis Island, and around the Statue of Liberty. These flights aroused an enormous amount of interest, and will undoubtedly, do a great deal to stimulate interest in the latest form of flying machine.

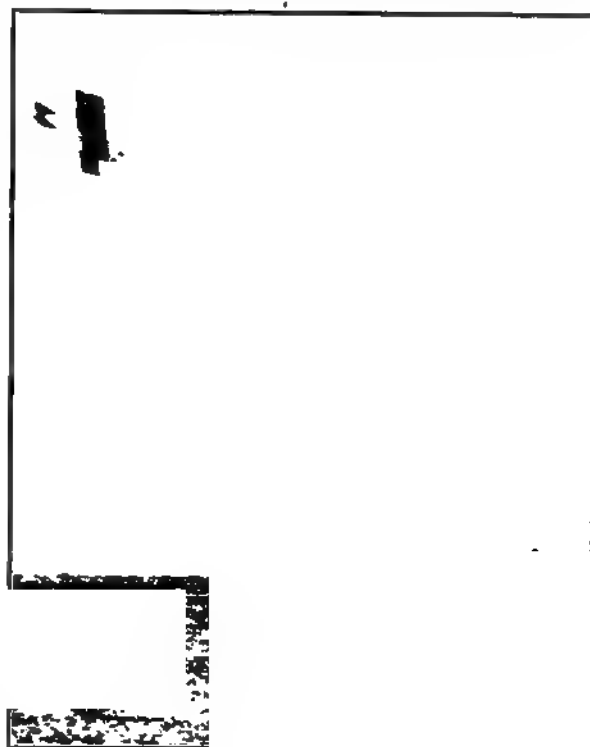
WILL BUILD 60-FOOT HYDROAEROPLANE

NEW YORK, February 9.—Yet another man is after the honor of being the first aviator to fly over the Atlantic. Martin and Atwood now have a rival in John E. Sloane. In his factory in Brooklyn, Sloane has started on a hydroaeroplane with a 60 foot spread which he hopes will teach him how to build a machine capable of flying from this continent to Europe. This machine is a passenger-carrying biplane with one pontoon. As soon as the ice breaks up Sloane will commence experimenting on Glace Bay, Cape Breton.

Sloane fears that there is no motor yet on the market that will run anywhere near 48 hours under full load, and is, therefore, making his pontoon big and strong enough to sail on a rough sea. This pontoon will be built of metal and divided into airtight compartments. In the event of his experiments meeting with any success, Sloane will, if he can get a naval escort, attempt to fly his hydroaeroplane from Newfoundland to Ireland. His plan is to replenish his gasoline tanks in midocean from the escort.

NORTH ISLAND NOW BUSIEST CAMP

SAN DIEGO, CAL., February 5.—The public aviation school conducted by Glenn H. Curtiss on North Island, San Diego Bay, and the United States Navy's experimental station, located at the same place, have developed into the biggest aviation camp ever established in the United States. The scene sometimes resembles an international aviation meet more than a school or experimental station. In addition to the fifteen pupils under the instruction of Lieut. J. W. McClaskey, U. S. M. C., retired, who has charge of the Curtiss school, some half dozen mechanics and helpers, the camp has recently been augmented by the arrival of the four Navy aviators—Lieuts. Ellyson and Towers, who operate the Navy's Curtiss hydroaeroplane, and Lieut. John Rodgers and Ensign Victor Herbster, who fly the Wright aeroplane with a Burgess hydroplane attachment. The south end of the island resembles a military camp, with tents and hangars dotting the shore for a quarter of a mile. In addition to the Navy's aviation force now at San Diego, it is announced that three more officers are to be detailed for instruction at this place. Constructor Richardson of the Navy, who has been



CURTIS PUPILS BUSY AT NORTH ISLAND.

at work on the new style of hull, or boat, for the hydroaeroplane, has been ordered to San Diego and will carry on his experiments at the North Island camp.

Lieut. Towers' experiments in wireless telegraphy at San Diego are watched with great interest. He has exchanged signals with the Government station at Point Loma on several occasions when in flight and will continue his work with the idea of increasing the range and efficiency of the wireless aeroplane equipment.

Whether the Oil Trust is responsible for the inability of the Navy aviators at San Diego to get high grade gasoline in that city, is something they are seeking to find out. Lieut. Ellyson was told by San Diego dealers that only the commercial standard grade of gasoline was sold on the coast, and that high grade would have to be ordered from New York and the extra freight paid by the buyer. As only the highest grade gasoline will suffice in the Navy type hydroaeroplanes, which have the dual control and carry two operators, Ellyson insists upon knowing why it can't be found on the coast. In his first flight with Lieut. Towers, in which they circled over the Hotel del Coronado, they had a hard

time reaching a height of 500 feet on account of the low grade of gasoline they were obliged to use.

One of the new attractions of this vicinity is the biplane being constructed by W. D. Waterman, an active member of the Aero Club of San Diego. Waterman has assembled his plane on North Island and is now taking it down with a view of removing it to a place where he can try it out. It embodies a number of standard and some original features.

The wings are Farman type, the upper pair being 30 feet long and the bottom planes 22 feet long with five-foot chord. The fusilage is of the Wright type. The landing gear is original and consists of two wheels with a heavy central skid, and the whole being equipped with rubber shock absorbers. The ailerons are Farman-type with a peddle control. The plane will be driven with a tractor screw equipped with Normal-type propeller 6 feet 3 inches with 4 feet 9 inches pitch. At present the machine is equipped with a 4-cylinder Gameron motor of 25-horsepower. The seat is in the rear of the engine.

PRIZE MOTOR CONTEST DELAYED

New York, February 10.—In planning for the aeronautical motor competition it was the aim of the technical committee of the Automobile Club of America to test at least one motor a week. That this schedule has not been lived up to has been, in great measure, the fault of competitors who have failed to keep appointments. So far only two motors, the Wright and the Kirkham, have undertaken the official test. The committee solicits the co-operation of the entrants with a view to expediting the tests and bringing the competition to a seasonable close. Announcement is made of the entry of one new motor, the Frontier, an 8-cylinder, V-type, entered by the Frontier Iron Works of Buffalo, N. Y.

FACTORY TO BUILD BOLAND BIPLANES

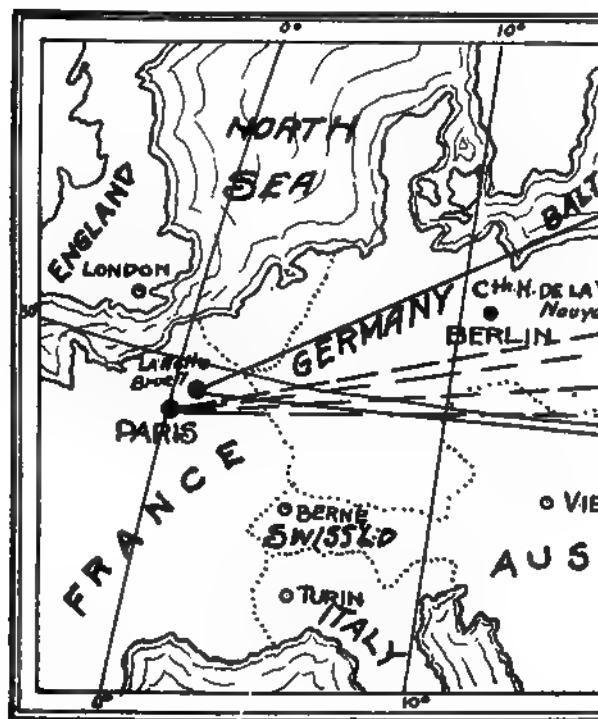
New York, February 10.—Frank E. Boland's tailless and rudderless biplane, which has been the wonder of the Long Island flyers for some months, is to be put on the market by a company of which Ingils M. Uppercu, of the Cadillac Motor Car Company, will be the head. The factory will probably be located in New Jersey. Boland steers by means of triangular jibs fixed vertically between each of the wing extremities. There is a front elevator on his machine.

NEW WORLD'S BALLOON DISTANCE RECORD

The world's record in a spherical balloon was broken by Emile Dubonnet on January seventh when he traveled from near Paris, France, to Sokolowka, Russia, a distance of 1,214.2 miles. The trip was made in the balloon Condor III, which has a volume of 76,700 cubic feet. It was inflated with hydro-

DUBONNET (RIGHT) AND DUPONT IN CONDOR III.

gen gas especially prepared for the trip. Dubonnet was accompanied by his aide, P. Dupont. They were supplied with 37 sacks of sand for ballast. The trip lasted for 31 hours. The



WORLD'S LONGEST BALLOON VOYAGES.

previous record was held by Count Henri De La Vaulx who made a voyage over practically the same course in 1900, being in the air 35 hours 45 minutes and traveling a total distance of 1,196.2 miles.

AERO MISSIONARIES BEGIN WORK

New York, February 9.—Missionaries are being sent out by the Aeronautical Society to tell the uninited something about the joys of flying. These workers are at the command of any club or society that wants to hear a lecture on the new sport. The speakers have a comprehensive selection of lantern slides. Within 50 miles of New York the expert lectures may be had free of charge; beyond 50 miles the clubs, etc., will be charged for transportation and accommodation. Three missionaries have already been selected. They are: Wilbur R. Kimball, George S. Bradt, the treasurer of the Society, and George W. Beatty. Mr. Kimball will be the first to be sent out on the road. His itinerary so far is as follows:

West Haven, Conn., Feb. 15; Connecticut Agricultural College, Storrs, Conn., Feb. 16; Men's Club Blign Reformed Church, Jersey City, Feb. 19; Geneva Automobile Club, Geneva, N. Y., Feb. 22; Coast Artillery, Connecticut National Guard, March 13.

FOREIGN NOTES

Ninety-three Miles an Hour.—On January 26, at Mouzon (Ardennes), France, Bathiat driving a 70-horsepower Gnome-engined Sommer monoplane broke the world's record for speed by traveling at the rate of 93.3 miles per hour for a distance of about 75 miles. It was officially observed.

At Pau, France, January 24, Tabuteau driving a Morane-Saulnier monoplane with a 50-horsepower Gnome motor established a world's record for speed and distance, covering 200 kilometers (124.3 miles) in 1 hour, 54 minutes, 20 seconds; 200 kilometers (155.3 miles) in 2 hours, 22 minutes, 57.3 seconds and 300 kilometers (186.4 miles) in 2 hours, 51 minutes, 43.4 seconds. At the same time the record for distance in two hours of 205.29 kilometers (127.6 miles) and three hours of 310.29 kilometers (192.8 miles) was made.

Six Passengers Up an Hour.—On the same day that Bathiat beat the speed records, Moila, at Douzy, on a Sommer biplane set up a new world's record by flying with six passengers for one hour six minutes.

A Death at Juvisy, France.—On Saturday last a fatal accident occurred at Juvisy, an over-confident young pupil named Fred Wagner being killed through his machine capsizing while attempting to make too abrupt a turn. The pilot was thrown out, and sustained a fractured skull.

Vedrine as Propagandist.—Being dissatisfied with the action of the Government regarding military aeroplanes, Vedrine, on Saturday afternoon, obtained a large number of bills bearing words to the effect of "Give France More Aeroplanes", and starting off from Issy he flew over to Paris, where he scattered a plentiful supply of the bills over the Chamber of Deputies. The query arises, will he be proceeded against under the new regulations prohibiting the throwing of paper about the Paris streets.

Fatal Accident at Senlis, Germany.—Lieut. Boerner, who met his death at Senlis, January 19, was a skillful flyer, having qualified for his brevet last December, and it is difficult to account for the accident. He was flying his monoplane at a height of about 985 feet when it was seen to swerve, turn over, and come down with a crash. The gasoline tank burst and the contents caught afire. As the aviator was strapped in his seat he was practically helpless, but some peasants ran to his aid and pulled him to a place of safety, although they were badly burned in doing so. The doctors found that the aviator had sustained severe burns and was badly bruised, but no bones were broken. He was at once taken to the hospital, and it was hoped that he might pull round, but he succumbed to his injuries on January 25.

SIX DAY MEET TO BE HELD AT OAKLAND

SAN FRANCISCO, CAL., February 8.—Contracts have been signed with the Oakland Chamber of Commerce, The Curtiss Exhibition Company and Dick Ferris for a six-day closed meet to be held at the Emeryville Race Track commencing on February 17 and to 25 inclusive.

The meet which is to be an exhibition one in every sense of the word will partake of the same circus nature as the recent meet at Los Angeles. Dick Ferris has assembled a number of the professional aviators who flew in Los Angeles and through the Curtiss Exhibition Company has made contracts with the Oakland Chamber of Commerce for the week of Washington's Birthday. The aviators and machines which will participate in the meet are Lincoln Beachey, 1912 Curtiss; William Hoff, model D, Curtiss biplane; Glenn L. Martin, Martin biplane with Hall-Scott power plant; Blanche Scott, Martin, Hall-Scott engine; Farnum T. Fish, Wright biplane; Weldon B. Cooke, Diamond biplane, Roberts motor; Hillary Beachey, Helmann-Beachey, Hall-Scott motor; Horace Kearny, Benoist biplane, Hall-Scott power plant.

It is the particular object of the management to make the meet a series of circus stunts rather than a contest for prize money. Every aviator receives a certain percentage of the gross receipts, the management receiving its percentage for expenses. What contests are billed, will be for the purpose of furnishing spectacles rather than for prizes, and while a number of close contests are expected it is not probable that any records will be broken. Being a closed meet, or rather an exhibition, no sanction will be applied for and no representatives of the Aeronautical Club of America will be in attendance.

Having two Saturdays and Sundays and one holiday to draw from it is expected that the financial results of the meeting will be good.

ENDURANCE MAN BUYS ROBERTS SIX

SAN FRANCISCO, CAL., February 8.—Weldon B. Cooke, who gained distinction at the recent Los Angeles meet by capturing the prize for total duration with a Roberts 4-X motor, today placed an order with the Roberts people for a six-cylinder engine. Cooke has requested the company to rush his new motor so that it will arrive in time for the coming Emeryville meeting. Cooke has also purchased the biplane formerly owned by Fred Wiseman of Santa Rosa and will use it in some of his flights. The biplane is equipped with a Hall-Scott motor, one of the first to be installed in this state.

New Denver-Made Aeroplane

HOW TO DESIGN A MODERN AEROPLANE*

By E. R. ARMSTRONG

The question of the efficiency of an aeroplane is so closely connected with that of the efficiency of the propeller, that the design of an efficient aeroplane, would not be complete unless the principles underlying propeller efficiency are given. In this way a propeller suitable for any given design may be selected with regard to the highest possible efficiency of the machine as a whole.

Recent experiments carried out by W. R. Turnbull and published by the Aeronautical Society of Great Britain, show that for the highest efficiency in a propeller, the diameter should not be less than nine to ten feet, with a pitch ratio of from one and one-quarter to one and one-half times the diameter. Fig. 24 shows the possible efficiency of propellers, from five to ten feet diameter, and a pitch ratio varying from one-quarter to twice the diameter.

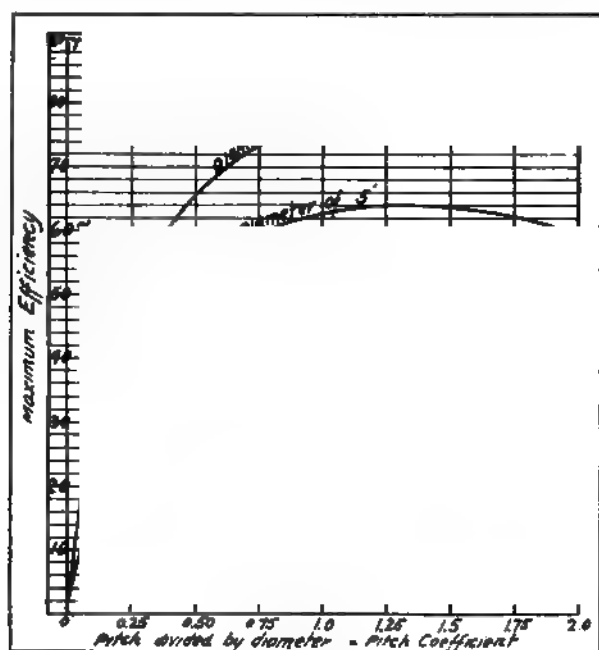


FIG. 24.

No propeller can be used without a certain percentage of slip, so every propeller has its maximum efficiency at some certain slip, depending upon the diameter and pitch coefficient. Fig. 25 shows the relationship of the most efficient slip, as it varies with the diameter and the change of pitch. Generally speaking, under average conditions the maximum efficiency is obtained from 30 to 35 per cent slip, depending upon the diameter. In selecting a propeller for any aeroplane, it should generally possess a diameter of not less than seven and one-half to eight feet, and a pitch ratio of not less than one. If the propeller is to be direct connected, within limits, the area of the propeller blades should be such that the motor can turn it at the speed necessary to obtain the full power of the motor. The general increase in speed and weight-carrying power of the modern aeroplane, is almost wholly dependent on the fact that the use of more powerful motors has made it possible to use propellers of greater pitch in relation to diameter, than was possible with less powerful motors. The modern 70 horsepower motor is usually fitted with a propeller of from eight to nine feet in diameter, and a pitch of from seven to eight feet. The efficiency of this combination may be as high as 65 percent, or even greater, whereas in the earlier machines, the efficiency rarely reached 50 per cent.

Below, in, Fig. 26, will be found in tabulated form the results obtained by Captain Dorand, from experiments carried out in France:

For a propeller having

pitch ratio D.....	.4	.6	.8	1.0	1.2
The best slip is.....	50%	35%	31%	29%	28%
And then the efficiency will be	35%	52%	70%	80%	84%

FIG. 26.

There is no question that the success of the early Wright machines was due to the use of propellers of high efficiency. The Wright brothers realized that a high pitch ratio was necessary for efficiency in the propellers. They also understood that for the greatest power with the least weight, a

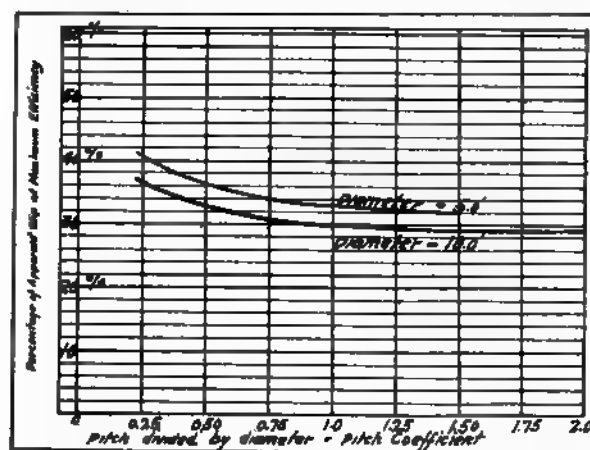


FIG. 25.

high speed of revolution of the motor was essential. They combined these two desirable features in their well known drive, with the result that their machines are as efficient as any, notwithstanding the fact that no special care has been taken to eliminate head resistance.

Many people, when speaking of the possible speed of an aeroplane, have assumed that in the very near future, speeds of from 150 to 200 miles per hour will be of common occurrence. While it is admitted that inherent stability lies in the direction of these high speeds that are relatively great in comparison with the usual air currents, it must be borne in mind, that the possible thrust per horsepower decreases very rapidly with the increase of the speed of the aeroplane, even with a propeller of the very highest efficiency. It is this decrease of the thrust per horsepower that will limit the speed of the future aeroplane. In Fig. 27 is given the thrust per horsepower possible with a nine-foot propeller with a pitch ratio of 1.4 and an efficiency of 78 per cent with a slip of 28.6 per cent.

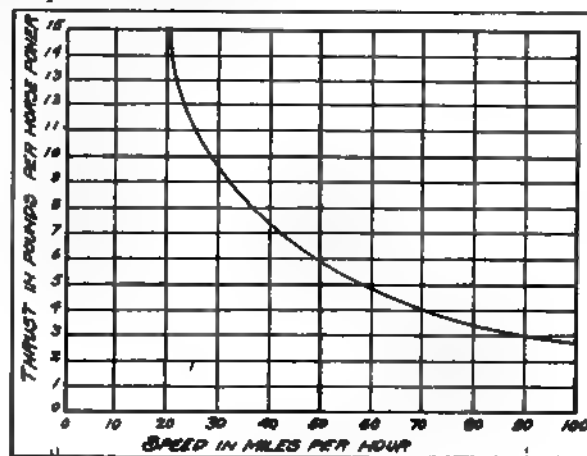


FIG. 27.

By the inspection of Fig. 27, it is seen that at 100 miles per hour, the highest possible thrust per horsepower, is a

*Begin, January 18, 1912, Vol. III, No. 15.

little over two pounds. The head resistance of even the most efficient monoplane has been determined by Eiffel to be equivalent to at least five square feet of normal surface. This area, as shown in Fig. 3, would meet with a resistance of 150 pounds, at the speed considered. It would require at least 75 horsepower to overcome this resistance, which does not in any way contribute to the support of the machine. So when speeds of even 150 miles per hour are talked of, pause and consider the conditions that must be met in order to obtain such speed.

Following the conclusion of this series of articles, it is proposed to illustrate the application of the principles laid down, by applying them to the design of a monoplane and a biplane. It is always well to have before one the chief ends to be served by any particular design, so for the monoplane it is assumed that it is to be the cup defender for the Gordon Bennett aviation trophy.

CORRESPONDENCE

[1047] R. C., Norwalk, O.—The normal angle of incidence of the Nieuport monoplane is five degrees.

[1048] F. W. M., Haverhill, Mass.—The fee for a pilot's license from the Aero Club of America is \$5.

[1048] G. V., Natrona, Pa.—For the correct relationship of the control areas of your proposed aeroplane read "How to design a modern aeroplane" now running in AERO.

[1049] W. K. J., Auburn, N. Y.—There can be no general comparison as to superiority of the monoplane and the biplane. Each is specially suited to certain conditions. For the highest speed the monoplane holds all records. The fastest monoplane with the least power is the Paulin-Tatin, which is credited with a speed of 82 miles an hour with a 50-horsepower Gnome motor. Gliders will carry from one to two pounds per square foot. The biplane glider is the most popular type.

[1050] H. J. H., Los Angeles, Cal.—The camber of the $4\frac{1}{2}$ foot Curtiss is $2\frac{1}{2}$ inches. At least a 40-horsepower motor should be used in this type. The regular motor used in the Curtiss is of 40-50-horsepower.

[1051] C. C., Tecumseh, Mich.—We believe that the demand for capable aviators will be greater this year than ever before. The average salary ranges from \$40 per week to as much as \$100. Many aviators who fly on percentage basis make considerably more.

[1052] J. R. K., Chicago, Ill.—The Gould prize of \$15,000 has not yet been won. Details have already been published in AERO.

[1053] G. J. W., Hillsdale, Mich.—The front and rear elevators of the new Curtiss are flat surfaces.

GETTING DOWN TO BUSINESS AFTER MEET

LOS ANGELES, CAL., February 8.—With the close of the successful eight-day show recently promoted at Dominguez Field by Dick Ferris and his aides, the professional and amateur aviation game was quieted down to real experiment and development work on the part of those who are left in the city.

William Hoff, Lincoln Beachey, Hillery Beachey, Horace Kearny and Weldon B. Cooke have packed their machines and gone to San Francisco where they will participate in a meet to be held at the Emeryville Race Track under the auspices of the Oakland Chamber of Commerce and Dick Ferris on February 17, 18, 22, 23, 24 and 25. Farnum T. Fish, Blanche Scott and Glenn Martin are all preparing to go North to participate in the same meet.

Martin is moving his factory to the new Griffith Aviation Park in the outskirts of Los Angeles and has plans for a commodious factory building and school. Martin will manufacture his Martin biplane and will perfect a new design of machine on which he is working. The field comprises some 200 acres of ideal flying ground and will soon be occupied by a number of schools and factories. Martin has lumber on the ground for four hangars and a factory building 50x110 feet in area. He has already formed a class of seven pupils and will

commence active work after the Emeryville meet. William Stevens a well known aeronautical engineer is assisting Martin and will occupy the position of chief engineer at the new factory. Stevens and Martin are perfecting a new steel tandem monoplane which is expected to give results when completed.

A Hall-Scott motor will be included in the equipment.

Martin is one of the southern California flyers who has distinctly made good. Quiet and unassuming in manner, absolutely practical, and a thorough mechanic, he has been quietly making his way to the front with little noise, but with marvelous results in both the manufacturing and exhibition business. Among other of his feats is that of flying at Brawley on July 4, last, when the thermometer registered 117 degrees in the shade and the altitude 132 feet below sea level. As far as can be ascertained he is the first man to make a flight from a field in a minus altitude.

William Stites, who recently received his pilot's license and flew at the recent meet, has acquired hangar space at Griffith Park and will devote his time to teaching and perfecting his machine.

Charles Willard is still in the city and has announced his intention of retiring from active flying for a few months at least. Willard has a 1912-Curtiss machine with Gnome power plant and has not yet decided what he will do with his outfit.

Cliff Turpin and Phil. O. Parmelee have signified their intention of remaining in California during the winter and have engagements to fill dates at some of the beaches and smaller towns. Howard Gill, who was injured in a fall at Dominguez Field is still at the California Hospital, but hopes to be out within the next ten days. Gill is making a rapid convalescence and will pack up and leave for home as soon as he is about again.

FEATURED AT LAND AND AIR SHOW

FRESNO, CAL., February 4.—Frank Bryant and Roy Francis were the attractions at the Land and Air Show held here yesterday and today under the auspices of the Converse Automatic Aeroplane Company, flying their machines before crowds of about five thousand persons. Bryant used his Curtiss biplane with eight-cylinder Curtiss power plant and Francis flew in his Gage biplane with Hall-Scott power plant.

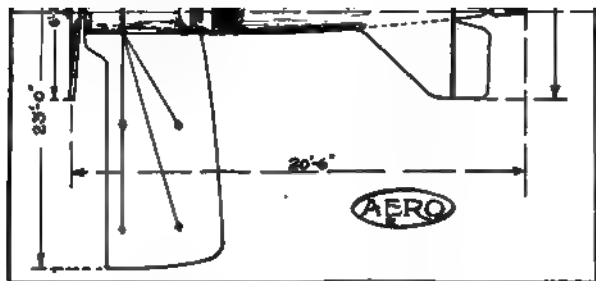
Yesterday at the close of the afternoon performance Bryant had a bad smash dropping from a height of 20 feet when his gasoline feed pipe broke and stopped his engine. He was uninjured, but several ribs and the propeller were smashed requiring all night work on the part of his mechanics for today's performance. Bryant attributes his escape to the fact that he was using the Converse stabilizer which enabled him to turn suddenly without overturning. He was so near the ground that he had no chance to glide and claims that if he had not have had the device he would have fallen under his engine.

Before the accident both aviators made flights to an altitude of 3,000 feet, Francis flying over the city at a great height and being compelled to volplane to the field when his gasoline gave out.

THRONG SEES VENICE BEACH FLIGHTS

VENICE, CAL., February 4.—Twenty thousand people witnessed a series of aeroplane flights on the beach at this place this afternoon when Phil. O. Parmelee, flying a Wright model X, and Cliff Turpin, in Wright model B, gave one of the most interesting exhibitions ever seen here. It was the intention of the aviators to give demonstrations with hydro-aeroplanes but on account of the heavy ground swell which was running they contented themselves with starting and landing on the beach and carrying a number of passengers. Six persons rode with them as passengers. Parmelee and Turpin were in the air about two hours each altogether. They towed their machines from Dominguez to Playa Del Rey and flew to the beach, a distance of four miles. An exhibition has been arranged by the Abbott-Kinney Company for next Sunday when the two aviators will again appear on the beach.

In the Field of Foreign Activity



THE NEW DEPERDUSSIN RACER.

New Deperdussin Racer Described.—The chief characteristics of the Deperdussin monoplane with which Veldrines recently broke the world's record with a speed of more than 90 miles an hour are: Area of the main planes, 107.5 square feet; spread, 23 feet; length over all, 20 feet 6 inches; lateral stability by wing warping; landing chassis, wheels and skids, with rubber shock absorbers; motor, 100-horsepower Gnome connected to 8 foot 2½-inch Rapid propeller.

The fuselage is a little larger than the regular Deperdussin, and is made up of three parts, the central part is of rectangular section as in the regular Deperdussin. To this central body reinforcements are fitted above and below of such a shape as to give the body the streamline form necessary for the least resistance.

The main planes have a width of 4 feet 3 inches where they join the body, and a width of 5 feet 3 inches at their extremities. Their camber is very slight and as the thickness is also small, this may in a measure explain the little resistance that they meet in the air. The leading edge of the wing is made of wood which makes it very stiff, the trailing edge is somewhat flexible. The main beams are of hickory, the ribs of I section of spruce, while the body is of ash. The wing covering is a special grade of linen coated with Emaillite.

The tail plane is built up in a similar manner to the main plane, the leading edge being of wood of such strength that the use of guy wires are not necessary. At the rear of the tail are two elevator planes.

The controls are identical with the standard Deperdussin except that they are placed within the body, in order to reduce the head resistance.

Verrept Raises Passenger Height Record.—Using his Borel monoplane, Verrept, at La Vidamee, France, February 20, carried two passengers to a height of 3,527 feet. The useful load carried was 474 pounds, while the total weight, including gasoline was officially checked at 661 pounds.

Flacher Does Better.—On January 23, at Bouy, France, Flacher, on his Henry Farman biplane, attacked the double-passenger height record, and took two friends up to an alti-

tude of 4,583 feet. He thus beat the world's record, but only held it for a few hours, as at Rheims, a few kilometers away, Prevost was making preparations for a similar flight.

Prevost Beats Them Both.—Also, on January 23, but at the Courcy-Betheney ground, near Rheims, Prevost, by taking up two passengers to 7,218 feet, won the right to the title of world's record holder. His mount was a Deperdussin monoplane, fitted with Gnome engine and a Rapid propeller. The start was made at 3:15 p. m. Although there was little wind, a thick mist made the conditions uncomfortable for the flyers.

German Balloon Trials.—For the German eliminating trials for the Gordon Bennett balloon race, 26 entries have been received and trials will take place on April 28 at Dresden and Leipzig simultaneously. Those who perform best in these two trials will have to compete again at Whitsun, starting from Breslau in order that the two defenders who, with Herr Gericke—last year's winner—will form the German team.

\$200,000 for French Naval Aviation.—The French naval authorities are including in their estimates for the current year the sum of \$200,000 for experiments with aeroplanes suitable for naval work. It is proposed to acquire a flying ground on the coast, while further alterations are to be made to the warship Foudre to fit her as a mother vessel for aeroplanes.

More French Military Aeroplanes.—According to Miller and, the Minister of War in the new French Cabinet, a still larger sum than was put forward by the old Minister of War is to be asked for by the Government, in order that military aviation may be placed on a still more sound footing. It is suggested that the sum voted for military aeronautics should be about \$4,400,000. The dirigible programme will remain unaltered, but more attention is to be given to the military aeroplane, or avions.

Bielovucic Turns Monoplanist.—After remaining true to the biplane for a very long time, Bielovucic has now taken up the monoplane and is learning to fly a Deperdussin machine at Pau. On his second attempt, January 18, he was flying at a good height over the country round the aerodrome in the direction of Angeles.

A Four-Seater Astra Wright.—At Villacoublay, on January 19, Gambert was testing a new Wright biplane, fitted with four seats, built by the Astra firm. With Colonel Boutteaux as a passenger, it developed a speed of 56 miles an hour during its first trial of 20 minutes, while a perfectly satisfactory landing was made at a speed of 19 miles.

Baby Bleriot Triad.—Recently, at Etampes, Perreyon was testing a new small monoplane, type XXVII, which has been specially built for use by Barrier during his American tour. The fuselage is entirely covered in and with a 50-horsepower Gnome engine the monoplane can attain a speed of 81 miles an hour, it is said.

De la Roche Over Paris.—On Saturday, Simon took up Madame de la Roche, well known at one time as a biplane pilot, on his Bleriot monoplane, and while in the air suggested a run over Paris. On their return to Issy Simon indulged in one or two spectacular tricks before landing.

A Long Flight in Germany.—On January 26, at Johannistahl, a new German record was set up by Herr Grulich flying a Harlan monoplane. With two passengers on board he succeeded in keeping up for 2 hours, 2 minutes, 45 seconds.

Aerial Post in Tripoli.—The aeroplane has been put to a somewhat novel use by the Italian authorities in Tripoli. A proclamation had been prepared assuring the Arab tribes of Italy's friendly attitude towards them, and stating that her sole desire is to develop the resources of the country. After copies had been made in Arabic a difficulty arose as to how to get them to the Arabs, but this was overcome by the aviators taking them and dropping them into the Arab camp.

Garros Flies Over Mountains.—Recently, Garros, on his Bleriot monoplane, flew from Rio de Janeiro to Thesopolis, a whaling station about 62 miles away, crossing the Serra dos Orgaos, which are more than 3,281 feet high. He afterwards returned to Rio.

E. PERCY NOEL, Founder-Editor

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SAN FRANCISCO

PARIS

Room 52, Sherwood Building

14 Avenue Bois de Boulogne

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The Editor is pleased to consider MS and photographs for publication, but only material that is likely to prove of interest to the readers of Aero. The Editor cannot undertake to answer technical inquiries except in the columns of Aero.

WHAT THE PUBLIC IS WAITING FOR

Ask an aviator and he will be likely to tell you that it is not needed, that he prefers to operate the aeroplane himself and would not care to depend upon a mechanical device to control either the lateral or longitudinal stability of the machine in which he flies; but if you talk aviation to your polite but unenthusiastic friend, the question uppermost in his mind will be, "When are aeroplanes going to be safe?"—meaning, "automatically stable."

Evade the issue, as manufacturers and fliers have, but the fact remains that the public is waiting, wait-

ing for the day when lateral and longitudinal stability will be preserved by the functions of the machine itself rather than by the skill of the pilot.

If the aeroplane were destined to be used only for sport, development in this particular would not be necessary, but if it were to serve no further purpose than this and others in which it has stood the test well, the number of its users, for all time in the future, would be limited.

Great speed has its utility, where risk is not a consideration, but if 100 miles an hour becomes a simple matter before the year is over—as now seems probable—it will not alter the attitude of the public one iota as far as the wider use of the aeroplane is concerned, unless at the same time the public is given that for which it is waiting.

Despite the fact that something has already been done abroad and in this country towards the solution of this most important of problems, it is not probable that those who are waiting will get what they want this year. Next year they should have it.

The attainment of an automatically stable aeroplane depends largely upon the realization of the necessity for it. The time has come to make sport—such as the dangerous race around pylones in the coming international cup race—a side issue, rather than the paramount one, and to take up air travel, which is a very different matter.

Into the period of actual air travel we must now begin to enter, or else the public will grow weary of waiting and be loath to believe what they eventually shall see. The day must come when aerial routes will be a fact not a fancy, when one will not fly over an aerodrome, but from one aerodrome to another. Then will the aerodromes really become ports for aeroplanes. One will go frequently from Nassau to Bergen Beach, from Cicero to Kinloch, from Kinloch to the Indianapolis speedway, from North Island to Dominguez, and from other ports to ports, as aerodromes are established about the country.

When stability is assured flying will not be considered dangerous and it will promptly become the fashion. It will be as in the early days of motor cars—everybody will be miserable until he has ridden in an aeroplane.

Then you will say to your once unenthusiastic friend:

"Take a few days off and go for a tour with me."

And he will be very happy to accept.

When the resignation of Charles Walsh, the balloonist, takes effect February 16, R. Emerson, the well-known sportsman and enthusiast of Topeka, Kans., will fill the secretary's chair at the Aero Club of American for a few weeks only. He is accepting the work chiefly to help the club out of a bad situation, it is believed.

Among the Aviators

Texas Aeroplane That Has Proved Successful

Although the officer-aviators at the Army School near Augusta, Ga., are very busy perfecting themselves as fliers and in practicing maneuvers that should be of value in war-time, there is really nothing unusual happening at the station at the present time. There have been no student-officers ordered to the school since last July. It is expected that a half-dozen officers will report for instruction in the near future.

Francis Raiche, formerly of Mineola, has been engaged as instructor by the Standard Aviation School of Chicago. Raiche holds the cup awarded by the Aeronautical Society to the first member to build an aeroplane that flew.

Bud Mars in a letter to AERO states that he is no longer connected with the American Aeroplane Manufacturing Company and School of Aviation, of Chicago. "They made me vice-president of their company without my consent," he writes.

Before leaving Los Angeles for San Francisco, February 5, Horace Kearny, the Saint Louis aviator who has been flying a Benoist biplane at the recent aviation meet, made arrangements with Glenn H. Curtiss to fly a 1912 Curtiss biplane while on the Pacific Coast.

Charles Walsh has been saving time and trouble by flying between cities where he has been giving exhibitions in Texas. On February 10 he flew at McKinney, Tex. He flew to that point from Sherman, Tex., 32 miles. Exhibitions were given at Sherman, February 2 and 7. Previously he flew from Bonham, Tex., to Sherman, 31 miles. While giving exhibitions Walsh flew over all of the above cities at a safe altitude of about 4,000 feet. He will leave Texas soon for Alabama.

Milwaukee newspapers state that Osmer W. Best of that city, who recently joined the Aero Exhibition Company School at St. Augustine, Fla., recently made his first flight of six miles, and that he is learning rapidly.

It is reported that the Alabama State Fair Association has given W. J. Berger permission to hold an aero exhibition at the Birmingham fair grounds in March.

E. A. Riggs, of Terre Haute, Ind., has practically completed his headless biplane. It is to be fitted with a Johnson two-cycle motor, Paragon propeller and Goodyear tires.

Mark Hollingsworth, a 15-year-old aviation enthusiast of Terre Haute, Ind., smashed his glider against a telegraph pole in attempting a towed flight behind an automobile. He received a few bruises.

The Terre Haute (Ind.) aviator, Louis Johnson, will start an exhibition tour as soon as he completes some hydroaeroplane experiments early in March. He has been flying regularly ever since he took up aviation.

At a recent meeting of the Gilmore Airship Company at Grass Valley, Cal., it was decided to complete the Gilmore aircraft, in order to try it out the latter part of February. Officers elected were: D. E. Matteson, president; W. H. Morgan, vice-president; Lyman Gilmore, secretary; E. H. Armstrong, business manager.

Claude Grahame-White has sold his 100-horsepower Gnome-Nieuport to one of the pupils of the Moisant Aviation School for a reported price of \$6,000. The sale is taken to indicate that the British airman has decided to give up flying here as enjoined by the Federal Court in the Wrights' suit. Grahame-White still has his Baby Grahame-White biplane at Nassau Boulevard, but its future disposition will probably be in the hangar of an American flier.

Lee Hammond and Miss Blanche Scott have recently acted the motion picture play, "Aviator and Automobilist Race for a Bride," written by Israel Ludlow.

J. J. PONTIUS IN THE SMITH-HOHN PLANE

The first Japanese to drive an automobile in his native land was G. T. Takasow, now a resident of Seattle, Wash. Now he is conducting experiments with the aeroplane. Takasow has been plugging along steadily for some time. Last summer he appeared on the Tacoma field with a Curtiss-type machine using a 40-60-horsepower Elbridge engine. He flew with marked success. Now he has under the process of construction two modified Farman types. Strongly built chassis for these machines are nearing completion in the shops of the Hamilton Aero Manufacturing Company. The tire equipment will be Goodyear using 24x3 leather tread tires of the detachable type.

Tacoma (Wash.) enthusiasts are busy. Thompson and Aronsen are waiting for favorable weather to fly their Bleriot type with Anzani 35-horsepower motor.

Clifford L. Webster left Marblehead, Mass., February 5 for Ormond, Fla., where he will instruct pupils in the use of a Burgess hydroaeroplane.

W. Sterling Burgess and Phillips Ward Page are now flying and instructing with a Burgess biplane at Sea Breeze, five miles from Ormond, and Webster will make his headquarters with the other aviators. The perfect beach and the heavy ocean swell kept Page and Burgess on the wheeled landing gear, but it is expected that Webster will make use of the nearby river for starting and alighting.

Edward Workman, of Chico, Cal., is building his second machine. It is to be a 32-foot biplane resembling the Farman.

Eugene Fowler, in his Wright, arrived at Thomasville, Ga., at 4 p. m., February 7. At 6 p. m. he left for Jacksonville, Fla., where he expects to end his ocean-to-ocean flight. He flew to Thomasville from Bainbridge, Ga.

C. O. Prowse is building a new machine which he expects to put on the market. He is now organizing a company and expects to conduct a school at Hopkinsville, Ky.

Plans have been completed for the erection of a factory for the Milwaukee School of Aviation. As soon as weather moderates, John W. Lietenberger, an instructor, is expected to make flights. Dr. A. Rudolph Silverstone is manager of the organization.

Charles Curtiss, formerly of Manistee, Mich., is building a tandem biplane in Chicago. It will be tried at the Aero Club of Illinois field when completed.

Temporary Office:
318 North 8th St.
St. Louis.

E. Percy Noel,
Secretary.

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E. A. Faust, Robert McCulloch, Sidney Bixby, Fred Essen, Andrew Drew, Ford Thomson, A. B. Lambert, W. Lambert.	

WINTER FLYING CONTINUES AT KINLOCH

KINLOCH, ST. LOUIS, MO., February 12.—Despite prevailing high winds and chilly weather flying is still going on at the Aero Club of St. Louis field with the usual regularity. During the past week Antony Jannus flew five days out of the seven, instructing pupils on the Benoist plane equipped with Roberts six, never having engine or plane trouble of any kind.

In the interim when not practicing actual flying, the students have been busily engaged in learning structural and engine detail at the shops of the school and company. Only unfavorable weather has held back students F. M. Bell and P. H. B. Morris from qualifying for pilot licenses.

On Saturday several passengers were taken for flights, among them L. B. Cozzens of Boston, Mass., T. H. Madden of Manchester, Okla., and Mrs. Williams of Kansas City, Mo. Mrs. Williams was taken for an extended flight and expressed herself delighted with the sensation, stating the probability of her becoming a Benoist pupil shortly. Jannus made a spectacular flight with Cozzens, to show the ease with which the plane can be handled.

Edward Korn with his Farman-type made several successful flights during the week and is booked to become a skillful aviator in the near future.

Bleakley & Wolcott are still hard at work on their Wright-type plane which they hope to have finished in a few more weeks.

PECK TRIES NEW COLUMBIA BIPLANE

WASHINGTON, D. C., February 12, (Telegram).—Thorough success attended the trials of the new Columbia biplane here today by Paul Peck. It was unofficially timed at a speed of 60 miles an hour. The Columbia machine is fitted with Gyro motor and Simmons propeller.



1,015,197, January 16, 1912.—Walter Hulbert Lawrence, Harwich Port, Mass. A flying machine propeller comprising a frame formed of two pairs of concentric rings arranged in parallel planes, clamps attached to the rings of each pair, rods connecting the clamps of rings in the same plane, and a vane stretched from the rod of one pair in one plane to the rod of a pair in the other plane.

1,015,200, January 16, 1912.—Albert E. Lycan, Tahoe, Idaho. An aeroplane comprising a horizontally disposed driving shaft, a plurality of vertically disposed rotary shafts operatively connected with said driving shaft, a plurality of arms fixedly connected with said rotary shaft, a plurality of inclined planes connecting said arms to form levitating planes when said shafts are rotated, a propeller operatively connected with said

driving shaft, a prime mover for said driving shaft, and means for varying the angle of incidence of the blades of said propeller to compensate for the variation in speed of said driving shaft.

1,015,540, January 23, 1912.—Carl Butow, Nuremberg, Germany. A propeller-blade comprising a sheet of flat material having its lesser end bifurcated, each furcation of said sheet being gradually tapered to a point, and inclosing an aperture of substantially oval shape, the said furcations being adapted to be secured to the nave of a propeller in such relation that while the greater portion of the sheet of material stands perpendicularly to the axis of the nave the pointed end surfaces of the furcations are on planes parallel to said axis.

1,015,568, January 23, 1912. John C. Langille, Newport, Wash. An aeroboot comprising a motor boat, of supporting frames rising from the motor boat, shafts extending transversely of the motor boat and having their ends pivotally supported by the supporting frames, concavo-convex lifting planes fixedly secured on the shafts, gear segments secured to and depending from the under sides of the planes, worm bearing shafts disposed in mesh with the segments and having inwardly extending ends, and means secured on the inwardly extending ends of the worm shafts for rotating the worms to adjust the position of the lifting planes on their pivot shafts.

1,015,656, January 23, 1912.—Albert Valentine, Thurman, Iowa. A flying machine comprising a car, uprights projecting therefrom, an open rectangular frame provided with trunnions journaled in bearings on said uprights to swing in a fore and aft direction, concentric vertical shafts journaled on said frame and carrying superposed bevel gears, a transmission shaft mounted on the frame and carrying a bevel gear meshing with the first-named gears for driving said vertical shafts in opposite directions, superposed propellers mounted upon the vertical shafts above said frame and having blades inclined in opposite directions, a drum fixed to one of said trunnions, means for turning said drum to tilt the frame in one direction or the other, a motor on the car, and gearing between the motor and said transverse shaft.

1,015,674, January 23, 1912.—Karl Ludwig Geest, Munich, Germany. A flying machine including a body adapted to receive an aeronaut, a vertically steering device placed at the rear end thereof, appliances situated in the body for adjusting the vertically steering device, supporting planes fast with said body and parabolically vaulted from front to rear, the arch of said vault following a substantially S-shaped course from a point adjacent the body in the front to a point remote from the body in the rear of each of said planes.

1,015,711, January 23, 1912.—Patrick D. Riordan, Arnot, Pa. A flying machine including a mast erected substantially midships and rotatably mounted, having at the upper end thereof cross-arms, an auxiliary plane pivotally mounted on said cross-arms, and means for rotating said mast.

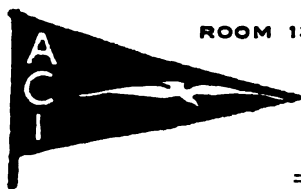
1,015,837, January 30, 1912.—Paul Louis Antoine Regnard, Paris, France. A flying machine embodying lateral and vertical stabilizing means, solenoids for actuating said stabilizing means, contacts on the longitudinal and transverse axis of the aeroplane, and a gyroscope rotating in a vertical plane having a vertical projection around which said contacts are arranged, whereby tipping of the aeroplane causes the projection on said gyroscope to bear against said contacts and close the circuit through said solenoid to actuate said stabilizing means to right the aeroplane.



Philadelphia Club Meeting

The regular meeting of the Philadelphia Aero Club was held on February 7 at the home of the secretary, D. E. Dunlap. This organization is composed strictly of boys that may be interested in aeronautics, or in model aeroplaning. The membership is cordially extended to all of those boys resident of Philadelphia as may apply to the secretary for information or application may be made in person at the next meeting, February 21, at 8 o'clock, at the home of Dunlap, 2209 Brown street, Philadelphia.

THE AERO CLUB OF ILLINOIS



OFFICE
ROOM 130, THE AUDITORIUM
CHICAGO

FLYING FIELD
FIFTY-SECOND AVE. AND
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BULLETIN

To the Members:

At the Banquet of February 10 there were submitted to the club members in the course of the general club meeting for which call had been issued, the following changes in the Constitution and By-Laws which were duly voted on, approved, and are now in effect:

Constitution

ARTICLE 5, SECTION 2.—Change to read “the resident memberships shall be limited to 1,000.”

ARTICLE 6 amended by changing the words “Six Directors” to “Twelve Directors.”

By-Laws

ARTICLE 1, SECTION 5.—Change first and second lines to read: “A Life member may be one who has paid the club the sum of \$100.00.”

ARTICLE 2, SECTION 1.—In the fourth line, change it to read “and Twelve Directors.”

ARTICLE 3, SECTION 1.—Change the first two lines to read: “The annual meeting of the club shall be held on the third Wednesday in January of each year.”

ARTICLE 2.—ADD SECTION 3, reading: “An Executive Committee of not more than five may be appointed by the Board of Directors to act for the Directors, and whose action shall be subject to the approval of the Board.”

ARTICLE 4, SECTION 1.—Change the first two lines to read: “Monthly meetings of the Board of Directors shall be held on the third Wednesday of each month.”

ARTICLE 4, SECTION 2.—Change the first line to read “Seven members of the Board shall constitute a quorum.”

ARTICLE 7.—Add SECTION 5. “No one shall incur any liabilities against the club exceeding \$50 unless authorized by the Board of Directors or a proper Committee.”

ARTICLE 9, SECTION 1.—Beginning with the fourth line change to read: “(4) a Professional Committee; (5) an Entertainment Committee; (6) an Aerodrome Committee; (7) a House Committee; (8) a Publicity Committee; (9) a Technical Committee; (10) an Interclub Relations Committee; (11) a Prize Committee; (12) an Auditing Committee; (13) a Finance Committee and (14) such other committees as it may from time to time deem expedient,” etc.

Six New Directors

Approved at the general club meeting, February 10, the additions to the Board of Directors are:

Wm. Bartholomay, Jr.	Chas. G. Dawes.
James B. Lund.	Chas. E. Gregory.
Chas. Dickinson.	Frank E. Scott.
	HAROLD W. ROBBINS,
	Secretary.

February 10, 1912

The loyalty of the members of The Aero Club of Illinois who attended the club banquet on this date has been of very material assistance in perpetuating the traditions of the club. While the president and some other officers were unavoidably absent the occasion may be regarded as remarkably successful, and to augur well indeed for the future.

It was the privilege of those present to listen to men of more than ordinary achievements in the aviation movement. The reputation for doing things which the officers and members of the club enjoy seems to be growing continually. Chicago, whose aviation beginnings were modest though nevertheless of some historic value, is acquiring greater fame of a better, and it is hoped a more stable kind. The spirit of co-operation fortunately prevalent among the members of the club in the majority of cases is to be one of the most potent factors in the success of our undertakings as it has been in connection with those of the city at large. Great things are expected of the future here as elsewhere.

Notes of the Model Competition

Chicago, February 10.—At the Saturday morning session today there were present representatives of the following schools:

Calumet High.	Crane Technical High.
Grant.	Lewis Champlin.
Lake High.	Lane Technical High.
Hyde Park High.	John Marshall High.
River Forest.	Central Y. M. C. A.

Active construction has already been started, and it is probable that there will be many models ready for trial by March 2, the date for the next general session.

When the individual High School Model Clubs are fully organized they will conduct their own preliminaries so that the elimination contests held by The Aero Club of Illinois will not be unwieldy. It is planned to have contests every Saturday, probably in the afternoon, at the Cicero field. Saturday mornings will be assigned for consultation and advice at the club headquarters in the Auditorium.

The coming Saturday morning, February 17, the general committee of the model division will meet at the club headquarters for further definition of plans, under the direction of Wm. B. Stout.

Glider Organization

Glider work is intermediate between model construction and that of full sized aeroplanes. It is essentially a requisite in the acquisition of the knowledge of actual flight conditions.

Its engineering value is well recognized. As a sport it has acquired tremendous popularity in the neighborhood of Boston and elsewhere. On both of these and the previous accounts it has a logical place in our activities, and it is planned to bring together all in Chicago and immediate vicinity who are interested on the evening of February 21, next Wednesday, at the Auditorium Hotel. Special notices will be sent reminding you of the date.

Personal Paragraphs

This wire from our President was read at the club banquet Saturday night:

“Tuxedo Park, N. Y., February 9, 1912.

“Aero Club of Illinois,
“Auditorium Hotel.

“I greatly regret I cannot be present at annual banquet. I sent heartiest wishes for a most interesting and helpful occasion.”

“HAROLD F. MCCORMICK.”

Vice-President James S. Stephens had hardly recovered from a recent indisposition so that he was unable to take a very active part at the club dinner. Treasurer Chas. E. Bartley performed the duties of toast-master in his usual diplomatic manner.

Cal Rodgers pleased the Aero Club of Illinois greatly by arriving from the east in time for the club banquet. He spoke with unusual facility and discernment regarding America's prospects in the coming cup race. He gave Glenn Curtiss pre-eminence as a designer and constructor of American speed machines. He was kind enough to favor Chicago as well as a center of aviation activity, at least in prospect.

Model Aeroplanes

Aviation Association of America

Individuals wishing to join and clubs desiring to affiliate with the Aviation Association of America are requested to communicate at once with the Temporary Chairman, Aviation Association of America, 606 Columbia Building, St. Louis, Mo. There are no dues. The object of the association is to encourage and regulate model and kite flying and gliding in America. Each member properly qualified will be furnished with the lapel emblem of the club. Notices of meetings of affiliated clubs will be published in this column. Additional names of individuals desiring to organize affiliated clubs are published below:

NEW YORK.

Binghamton—Mason Smyth, 42 Cleveland avenue.
Oswego—Clarence Ballard, 241 Erie street.
Long Island—Jamaica, August S. Meyers, Hancock street and Barrett avenue.

MASSACHUSETTS.

Westfield—Edgar Plummer, 14 Woronoco avenue.
Lowell—Jas. J. Macdonald, 240 Thorndike street.

IOWA.

Davenport—Arthur Detmers, 1732 Eola street.
Des Moines—C. W. Smalley, 1915 High street.

MINNESOTA.

Minneapolis—C. E. Carleton, 1917 Park avenue.
Winona—A. D. Thurley, 200 E. King street.

CALIFORNIA.

Los Angeles—Raymond Lamb, 903 W. Forty-seventh street.
KANSAS.

Olathe—R. S. Herman, National Hotel.

ALABAMA.

Birmingham—R. L. Gregory, 3803 Cliff Road.

WASHINGTON.

Seattle—R. S. Macfarlane, 2129 Lake Terrace.

Bragg-Smith Model Biplane Described

One of the most successful English model aeroplanes is the Bragg-Smith, which is noted for its stability in flight. It has received the highest awards for design and is a fairly long flier. When fully wound it flies about 1,000 feet, the duration being not more than 37 seconds. The original machine rises from the ground in about 12 feet.

In this model the ratio of surface in the main plane and the elevator is nine to one. The weight complete is 6.75 ounces and the average load is about 30.6 square inches to the ounce.

The distinctive shape of the main planes is shown clearly in Fig. 1, from which it can be seen that the upper plane is straight, i. e., has no dihedral angle, but the lower plane has

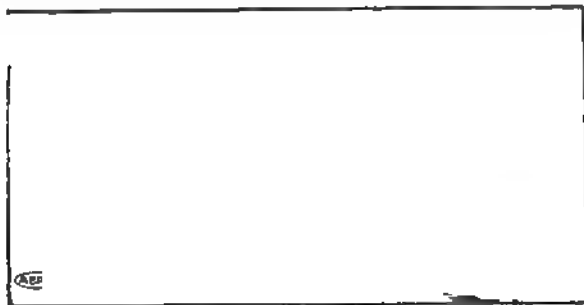
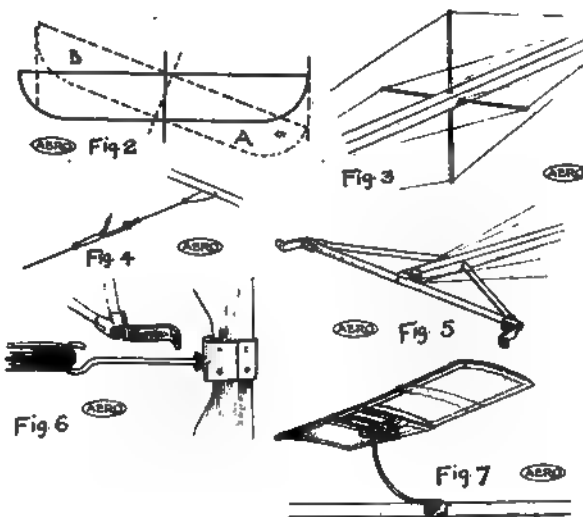


FIG. 1.

its extremities taken up in easy curves to meet the upper plane. Both planes are cambered throughout and have a slight angle of incidence, even at the curves of the lower plane. The diagram in Fig. 2 shows how lateral stability is obtained; the full lines show the plane in normal flight and the dotted ones show what happens when the plane is tilted out of the horizontal, either in turning or by a side gust. It will be seen by comparison with the full line sketch that the useful area on the lower side A becomes greater than that of the higher side B, consequently the machine is restored to a level keel. The greater the tilt the greater is the restoring

force, as it acts further from the center of the machine. In flight the machine returns to a level keel more quickly than the ordinary dihedral angle planes. On one or two occasions I have seen the model caught by a sudden extra strong gust and rolled completely over but it always came back right side up to a level keel again with a drop of a little more than a foot or so.

Longitudinal stability is obtained in the usual way by giving the front plane a greater angle of incidence than the



BRAGG-SMITH DETAILS.

main plane. The ratio of the area of the front plane to the area of the main plane seems very good, for the machine, when thrown out of its level path, damps out very quickly in a series of decidedly short phugoid curves.

The fuselage consists of a single $\frac{1}{4}$ -inch square section spruce spar tapered to 3-16-inch square at the forward end, and 2 feet 7 inches long. It is stayed with piano wire, king-posts and tie wires. As shown in Fig. 3, the king-posts are pushed through holes drilled in the fuselage spar and prevented from shifting by a few turns of thin wire and a bead of solder. The ends of the king-posts are slightly flattened and provided each with a nick to take the tie wire. The wire strainer used is very simple and light, consisting as shown in Fig. 4, of an L-shaped piece of piano wire with a loop at one end to make fast to one tie wire. The other tie wire has a loop which is just slipped over the shank of the L. If the ties require tightening the loop is slipped off the shank and the shank bent so that it comes nearer to the loop of the L-piece; the tie wire is then once again slipped on.

The cross outrigger carrying the propellers shown in Fig. 5, is of 2-16-inch round section birch, and is triangulated to the frame with compression struts of about $\frac{1}{8}$ -inch round section. The outrigger cross spar is attached to the end of the frame by means of small nails, and the ends of the compression struts are also fixed to the fuselage with nails. Figs. 5 and 6 illustrate the brass brackets which carry the propellers and effect joints between the ends of the cross outrigger and its struts. A single journal is used to each propeller, and these are provided each with a hole considerably larger than the propeller-shafts. The face of the journal is recessed, and into the recess fits a steel collet, which serves both as a thrust and load bearing, being held in place by the tension of the elastic. If the propeller receives a blow in landing or any other way, it is quite free to give out of the way as the collet slips out of the journal, but it has a good and true bearing. Fig. 6 shows how the bent wood propellers are attached to their shafts by sheet metal clips, the propellers being prevented from moving in the clip by punch dents. The end of the shaft being bent over when it enters the clip, the driving stress is not taken by a solder joint.

This is shown in dotted lines in the sketch.

Continued on Page 408.

Curtiss Superiority

Again Demonstrated at Home and Abroad—on Land and Sea!

While Lincoln Beachey and other famous CURTISS AVIATORS were making a clean sweep in competition at the Los Angeles International Meet with the new 1912 **Curtiss Aeroplane** Hugh Robinson was giving Europe its first view of flights from the sea at Nice France, in the new 1912 **Curtiss Hydroaeroplane**

ROBINSON AT NICE, FRANCE

In keeping with these evidences of CURTISS superiority, the Aero Club of America, the highest authority on aviation in the United States, has officially recognized

BEACHEY AT LOS ANGELES

CURTISS PROGRESS

by awarding to MR. GLENN H. CURTISS, the COLLIER AVIATION TROPHY, for the greatest advance during the year 1911. These things are facts and they go to prove absolute CURTISS durability.

Achievements are the Best Arguments; Records are the Only Proofs

If Beachey and Robinson had not been using Machines of the highest degree of perfection, equipped with the famous CURTISS MOTOR, they would not have been able to convince two Continents of the superior speed, safety, practicability and progress of the CURTISS AEROPLANE and HYDROAEROPLANE. These facts cannot be ignored. They furnish conclusive evidence of the rapid advances of the practical sort. Most of all they prove beyond dispute that the name

CURTISS LEADS THE WORLD IN AVIATION

Our new 1912 Catalogue is now ready for distribution. It contains facts and illustrations that will interest you about CURTISS AEROPLANES, HYDROAEROPLANES, MOTORS, THE CURTISS AVIATION SCHOOLS AND EXHIBITIONS by the famous CURTISS AVIATORS. For particulars regarding any of these subjects, address:

THE CURTISS EXHIBITION CO., 1737 Broadway, :: NEW YORK CITY
JEROME FANCIULLI, General Manager
Sales Agents and Foreign Representatives for The Curtiss Aeroplane Co., Hammondsport, N. Y.

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SITUATIONS VACANT.

AVIATORS—Having enlarged our factory facilities, sales and exhibition staff, we will make yearly contracts with a limited number of enterprising young men on a salary and commission basis. We teach you to fly and furnish you our Bleriot monoplane for exhibition work when competent. A deposit of \$1,000 is required, which amount will be refunded as soon as you make good and show an equal earning for the company. National Aero Company, 40 East Eighth St., New York.

SITUATIONS WANTED.

AVIATOR—Situation as aviator; one year's experience; can design and build. Box 174, care Aero, St. Louis.

AVIATOR—French licensed aviator, monoplane or biplane driver; designer and mechanic, thoroughly capable builder; three years' experience abroad, having worked at Gnome and Bleriot factory (France). Owner of drawings with full particulars, lately arrived in America, is open for any proposition in connection with his ability. Address R. M., General Delivery, Montreal, Canada.

ASSISTANT—Very neat, refined young colored man wishes position, any kind that gives chances as aviator or mechanic. Eight years a chauffeur. References unexcelled. Particulars address Griffith Gunther, 349 W. 59th St., New York.

WOULD BE AVIATOR—Young man, 25, desires employment where he can learn aviation. Not salary, but a fair opportunity to learn thoroughly the profession, his object. Would make satisfactory contract with party giving him a chance. Can give some security. Henry Artur, 719 South Olive St., Los Angeles, Cal.

MISCELLANEOUS WANTS.

MOTORS—Wanted to communicate with those having second-hand aerial motors and planes for sale. Box 229, care Aero, St. Louis.

FOR SALE.

AEROPLANES—Bought and sold. American Aviation Co., Incorporated, 2957 N. Lawndale, Chicago.

AEROPLANE—For sale Curtiss-type machine, just recovered and rewired as new, \$300.00, 30-horsepower Kirkham motor \$400.00, radiators \$20 up, propellers from \$25 up. Pupils taught. Write for particulars. Thomas Brothers, Bath, N. Y.

AIRCRAFT SUPPLIES—Aeroplanes for sale and built to order; propellers, models and model stock; Chicago engines; flying models. Chicago Aero Works, H. S. Renton, Prop., 164 Wabash Ave., Chicago, Ill.

CASTINGS—Complete sets of castings for buildings the Bleriot as per AERO, Vol. II. Lynch Brothers, Aeronautic Engineers, 61 Wick Place, Youngstown, Ohio.

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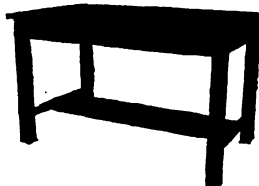
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Continued from page 404

The propellers are rather unusual in shape; as Fig 1 shows, they have a somewhat low aspect ratio. The diameter is 8 $\frac{1}{4}$ inches and the pitch angle 36 degrees, the blade being 23-16 inches wide close to the tip. The material is satin walnut.

Each propeller is driven by eight strands of 1-12-inch square elastic. The total elastic used on the model weighs just under 1 $\frac{1}{4}$ ounces. Each propeller can be wound up to 600 turns repeatedly.

The spars and ribs of the planes are made of American white wood. There are two spars to each plane, forming the front and rear edges, and the ends of the ribs which rest above are fastened to them by means of tiny pins. The two planes are stayed apart in the middle portion by three pairs of struts made from split bamboo, and attached to the main spars by pins. The center ribs of each plane are reinforced, and the struts between them are attached at their center to the main frame spar by lashings of copper wire. Proofed silk is used for the covering, and each rib is covered with a pocket on the underside of planes.

The dimensions are, span 24 inches, chord, 4 inches, aspect ratio 6 to 1, approximable area of sustaining surface 178 square inches. The gap between top and bottom plane is 5 $\frac{1}{4}$ inches.

The elevator is of 3 $\frac{3}{4}$ inches span, 2 $\frac{1}{4}$ inches chord, aspect ratio about 3.9 to 1 and area 19.6 square inches. The attachment of the elevator to the main frame member is shown in Fig. 7. A single bent piano wire stay is fastened to the frame by a sheet brass bracket and the upper end is attached to a thin wooden cross-bar. The reinforced central pair of ribs of the elevator carry a similar cross-bar, and the two are held together by bands of elastic.

Two very effective landing chassis are provided, one at the forward end of the machine, and the other just below the main planes. In addition, there is a rearward curving skid to prevent the propellers being damaged as the nose of the model tilts up when leaving the ground. As will be seen from Fig. 1, the front skid is provided with a running wheel,

and is made of a pair of curved piano wires, forks reinforced some way down by a second pair. This skid is very springy but quite strong. The design of the main chassis is quite clear, the apices of the two V frames of wire being joined by a wire crosspiece. The two wheels run on a separate axle which is held to the cross piece by rubber bands, after the style of full-sized machines. Both chassis are attached by means of split sheet brass brackets and are easily detached, if required, by opening these brackets.

"MISUNDERSTANDING" TO BE CLEARED

NEW YORK, February 10.—No action was taken at this week's meeting of the directors of the Aero Club of America in the matter of the protest made by the Aeronautical Society against Robert J. Collier's speech at the Aero Club dinner. Collier, as president of the club, is alleged to have said that President Taft "got into the wrong pew" when he attended the banquet of the Aeronautical Society last year. After this week's meeting Henry A. Wise-Wood, vice-president said:

"Today's meeting was called for a specified purpose and was attended by only a few directors. The letter from the Aeronautical Society did not come up at all. It will not come before the directors for action until next Wednesday. By that time we will have a written communication upon the subject from Mr. Collier, who is in the South. In the meantime, however, I wish to impress upon you most earnestly that there is nothing but the most friendly feeling between the two organizations."

LACROIX TAKES FRENCH MOTORS AGENCY

NEW YORK, February 10.—Paul Lacroix, of the Paul Lacroix Automobile Company of Broadway and 57th Street, has secured the American agency for the Anzani and Renault aviation motors and the Borel-Morane aeroplane. Gnome motors will also be sold and Lacroix is well-known in automobile circles as the American agent for the English Daimler, Clement-Bayard, Renault, Itala, Zedel and Panhard automobiles.

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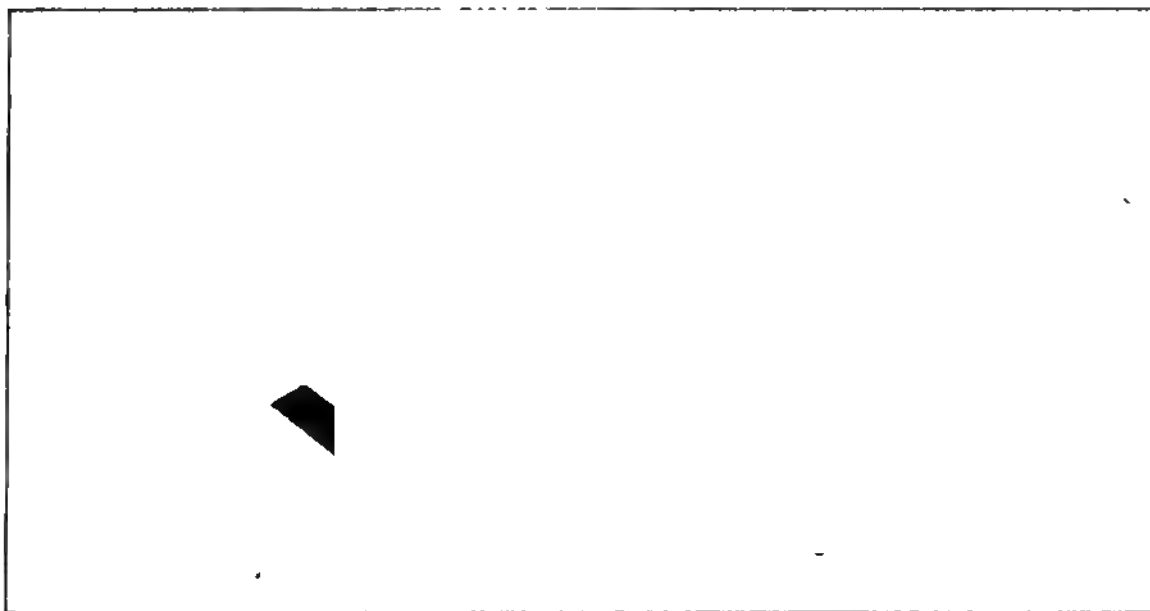
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biggest in value
and greatest in circulation
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To readers: If you are not regular subscribers, tell your newsdealer two weeks ahead that you want to be sure to have a copy of this issue.

To advertisers: Advertising pages will be closed at 12 p. m., Friday, March 29. Preference in regard to positions will be given according to order in which reservations for space are made.

To aviators: Write for special offer in regard to the Directory of Aviators for this issue only.

To newsdealers: Place your orders with your branches immediately for an extra supply of copies of this issue. Branches must receive special orders not later than March 23.

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April 6th**

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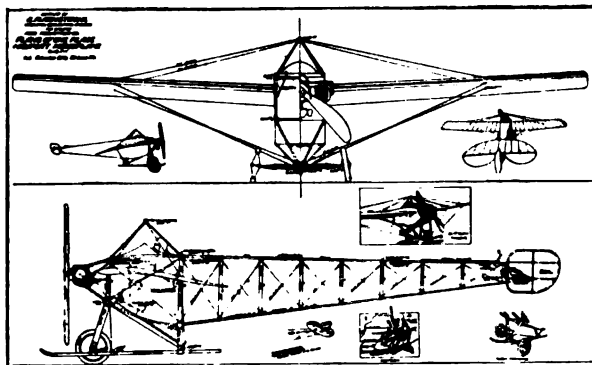
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Edited by E. PERCY NOEL

PREPARING FOR BOSTON MEET ON NOVEL BASIS



BOSTON, Mass., February 14.—William A. P. Willard, a member of the executive committee of the 1910 and 1911 aviation meets at Atlantic and father of Charles F. Willard, has organized a group of local business men for the purpose of holding an aviation meet on the Harvard Aviation Field, the scene of Boston's previous meets, from June 29 to July 7 inclusive.

He announces that he already has the entries of George W. Beatty, the Wright flier, and Lincoln Beachey, Hugh A. Robinson, Charles C. Witmer, Charles F. Walsh and Beckwith Havens of the Curtiss forces. He is now in communication with the Wright Company, the Burgess Company, and Curtiss and the Moisant International Aviators regarding entries of their men in the meet.

The year's meet will be a popular-priced affair, and is endorsed by Adams D. Claflin and Charles J. Glidden, respectively manager and chairman of the contest committee of the meets previously held. Willard states that Major Samuel Reber, U. S. A., chairman of the contest committee of the Aero Club of America, has signified his willingness to sanction a meet for the above dates at Atlantic. It is understood that the dates have been reserved pending his action.

The plan of the field will be materially changed. In previous years the getaway has extended east and west and the course has been in the main far from the grand stand. The plans for this year show a course running north and south for nearly half a mile, with a perimeter of approximately a mile and one-half. The prices of admission will be 25 cents for individuals and \$1 for automobiles, in addition to a charge of 25 cents for each occupant. The proposed parking space will accommodate 3,000 machines.

At the extreme south end of the getaway will be the 25-cent seats, next to them on the south the 50-cent seats, then a section reserved for complimentary tickets, the \$1 seats being at the south end of the grand stand. Next to the grand stand will be the two-story judges' stand and the press enclosure.

The four large wooden hangars now on the field will be moved into a line on the south side of the grand stand and will be so placed that flat roofs can be thrown across between them, making a total of 18 hangars. For 1,000 feet southward will extend a line of wire fence, back of which several thousand standees can be accommodated.

Contracts to aviators are of four classes, the first being guaranteed alone, the second being for prizes and one guarantee, that of flights during exhibition hours, the third for prizes and guarantees for daily participation in exhibition

flying and passenger carrying, and the fourth for prize money alone.

Ample provision will be made for such amateur flyers as desire to compete in events restricted to this class, the plan being to give the field over to amateur fliers between 12:30 and 2 p. m. Arrangements are also being made with C. C. Bonnette to make a parachute jump each day prior to the opening of the contests.

The amount of prize money has not been determined, but Willard declares that when this announcement is made the money will be deposited in a local bank for this specific purpose alone. It is estimated that the expense of fitting up the field will be about \$8,000. Temporary offices have been established at 15 Court street, pending the renting of larger headquarters on Washington street. Willard is being assisted in the laying out of the field by his son Harry, who has been associated with Charles F. Willard for several years, while Leon E. Merchant, a popular local newspaper man, has already started a publicity and advertising campaign.

"The two previous meets were financial failures because the admission prices were too high. I believe that a low-priced meet, where the young fellow making \$10 a week can take his friends without great expense, will be successful.

"A feature that is bound to attract will be the keeping of the rear of the hangars open to the view of the public, although the people will be kept out by means of wire netting. There is great interest in aviation here and with Beachey, Beatty and the other head-liners who we will have here, we are certain of a real meet. Hydroaeroplane races, speed races with several fliers starting from scratch, postal service and a possible long-distance cross-country race will be other features."



WANT MUNICIPAL AERODROME

NEW YORK, February 16.—An effort is being made by a number of members of the Aeronautical Society to secure Creedmoor, an abandoned rifle range, a few miles from Jamaica, Long Island, for a municipal aviation field. Creedmoor would make an ideal flying park as it has an expanse of about 400 practically treeless acres. The Park Commissioner of Queen's County has been anxious to obtain Creedmoor for a public park for many months. It has yet to be ascertained, however, whether the Commissioner would be willing to make the park a public landing place for aviators.

COLLIER OFFERS AN EXPLANATION

NEW ORLEANS, LA., February 15.—Owing to sickness in his party, R. J. Collier, president of the Aero Club of America, did not depart for Panama as scheduled. For the first time since his coming to New Orleans he submitted to an interview, in regard to the Aeronautical Society "call down" for alleged remarks at the recent banquet given by the Aero Club of America. Collier explained the facts in the case as follows:

"At a dinner of the Aeronautical Society given a year or so ago a gold medal was presented to William Randolph Hearst for his offer of \$50,000 for the first aviator to cross the continent. At this year's dinner of the Aero Club of America, a gold medal was presented to Calbraith Rodgers for having made the trip, and in the course of my remarks I mentioned that I would rather have the gold medal presented to Rodgers by the Aero Club than the gold medal presented Hearst for his sportsmanship by the Aeronautical Society.

"President Taft came in a little later and I repeated the remark for his benefit and this is how the misunderstanding occurred. I never said that the President got into the wrong pew."

The occasion for the above statement from Collier was the resolution adopted by the Aeronautical Society, which "respectfully requests the board of directors of the Aero Club of America to explain the said statements of the president of the Aero Club of America, the board of directors of the Aeronautical Society assuming that, if the imputation contained in said statement—that the President had got into the wrong pew—was made without malicious intention, the board of directors of the Aero Club of America will gladly offer appropriate reparation."

In answer to a wire from the New York Times, Collier submitted the following: "The Aeronautical Society, at its dinner last year at which President Taft was present, formally presented Hearst with a gold medal for his offer of \$50,000 for a flight from Atlantic to Pacific Coast.

"The Aero Club of America this year presented its gold medal to Calbraith P. Rodgers, the first and only aviator to make the flight. Instead of \$50,000 for offering which Hearst received gold medal from the Aeronautical Society, Mr. Rodgers was offered a silver cup by Hearst, which he refused.

"In view of comparative achievements toward the cause of aviation of Hearst and Rodgers, I remarked that our neighbor, the Aeronautical Society had got into the wrong pew.

"I said furthermore, I should rather possess Rodgers' medal than Hearst's. Remembering that he was the guest of honor at both dinners, I repeated these remarks to Mr. Taft. In my speech, however, I referred to the usefulness and enterprise of the Aeronautical Society, whose president, Willis McCormick, is a personal friend.

"I had not the faintest intention of reflecting upon that able and distinguished organization. The animal version, if such there was, being upon the sportsmanship of Hearst."

WILL REORGANIZE INDIANAPOLIS CLUB

INDIANAPOLIS, IND, February 17.—With spring and accompanying favorable weather, affairs in Indianapolis are to take on renewed activity. Plans are being formulated for the reorganization of the Aero Club of Indiana and frequent aeroplane and balloon events will mark the season. Commercially, a no less pretentious project than the financing of a dirigible balloon passenger line between Cincinnati, Dayton and this city is projected. It is still in the tentative stage. If attempted it will be financed by commercial concerns for advertising purposes.

Indianapolis has two qualified balloon pilots, George L. Bumbaugh and Carl G. Fisher, the latter an automobile manufacturer. Both have now turned their attention to aeroplanes. Dr. Goethe Link, who won the national handicap race for amateur balloonists here two years ago, expected to earn his pilot's license but rested on his laurels after winning a single trophy.

The Aero Club when reorganized will have a new corps of officers, it is stated, and several new enthusiasts and patrons of the sport will be among the members. Albert Lieber, president of the Indianapolis Brewing Company will be president

according to an advance announcement.

Local interest in aviation centers about an aeroplane and balloon manufacturing plant at the grounds of the Indianapolis Motor Speedway. Several local amateurs have aeroplanes under course of construction, but none has attempted flight aside from Bumbaugh, Fisher and Russel Shaw, the latter a young operator who made a dozen successful flights at the state fair last fall in a biplane of the Farman type.

The Speedway, enclosing several hundred acres of cleared land is open without charge to local aviators or others. Carl

RUSSEL SHAW AT THE SPEEDWAY.

Fisher, promoter and principal owner of the Speedway annually has offered encouragement to devotees of the sport.

Bumbaugh has in the Speedway plant three biplanes, a monoplane and a large dirigible frame. Two of the biplanes are of the Curtiss type and one is a Farman type equipped with a wind shield of light steel tubing. Another monoplane is under course of construction. It will be equipped with a Noblitt revolving motor, a new power producer manufactured by a local concern.

N. E. CLUB TO HAVE LADIES' NIGHT

BOSTON, February 16.—The Aero Club of New England will hold the first ladies' night in the history of the organization on March 5 at the Hotel Somerset, the principal speakers for the guests being Mrs. David Todd of Amherst and Mrs. H. Helm Clayton of Canton. Mrs. Todd, who is the wife of Prof. Todd of Amherst College, will tell of her astronomical observations of Halley's comet from the basket of a balloon, while Mrs. Clayton, whose husband, a well-known aeronaut and student of meteorology, will describe an exciting flight made in company with him.

President Jay B. Benton will present the trophies won during the year of 1911 to the successful competitors, while speakers are expected from the leading eastern aero clubs, including the Aero Club of America.

The California Aviation Company of San Francisco is preparing to open a new flying field at Easton, Cal., and has already erected several weather-proof hangars on the property. The field consists of a level 100 acre tract of land ideally situated for flying purposes, within easy access of the main line of the Southern Pacific Railroad, and two minutes walk from the United Railroads of San Francisco. Several amateurs have already signed leases for hangar space.

MANHATTAN BECOMES PLAYGROUND FOR FLIERS



FRANK COFFYN STARTING FROM THE BATTERY IN THE ALGER HYDRO.

New York, February 17.—Frank Coffyn has been doing some valuable work this week in demonstrating to New Yorkers the handiness of the Wright-Alger hydroaeroplane. He made two particularly noteworthy flights over the water of New York Harbor, and has aroused considerable interest in this form of craft. On Lincoln's birthday Coffyn, with a moving picture operator, flew from a raft off Pier A, at the Battery, over Governor's Island and around the Statue of Liberty. A large crowd witnessed the 15-minute flight from Battery Park. The machine was covered with icicles when it returned to the float.

On Tuesday Coffyn was out again. This time he flew first down the Bay, then a half mile up the Hudson, back again to Governor's Island and then up the East River over the Brooklyn and Manhattan Bridge. On his way back Coffyn shot down from a height of 1,500 feet and dipped under Brooklyn Bridge. Upon his return to land Coffyn said that the wind blew so hard that he was almost jostled out of his seat. At Brooklyn Bridge, the second time, he was only fifteen feet slow the roadway and caught the warm blast from a tug's smoke pipe. Coffyn has a Wright biplane fitted with the two pontoons that were designed and built at Detroit by Coffyn in conjunction with Russell A. Alger, of the Detroit Aero Club.

Extraordinary air conditions were met by Coffyn on Friday. He fastened a moving picture machine to his hydro, intending to operate the aeroplane with one hand and the camera with the other, but on account of the treacherous wind, the aviator was only partly successful in his film making. The wind seemed to be blowing in all directions and during the whole of the 15 minutes he was up he was kept more than busy balancing his biplane. On one occasion Coffyn ran into a "hole" and dropped at least fifty feet. Undoubtedly the proximity of the skyscrapers had a lot to do with the formation of this decluding column of air.

Beatty Lands in Central Park

NASSAU BOULEVARD, N. Y., February 16. —G. W. Beatty had a hair-raising experience on Tuesday when he made a flight with a woman passenger who became hysterical, screamed and moved in her seat, when the motor stopped with the biplane 1,000 feet above Floral Park. He had to hold the passenger, Mrs. William A. Dunlap of Nassau Boulevard, with one hand to keep her from throwing the machine out of balance. The freezing of the gasoline—the thermometer stood around zero at the time—had caused the motor to stop.

Later in the day Beatty flew from Nassau Boulevard to New

York, a distance of about 20 miles, and landed in Central Park.

Soon after leaving the aerodrome an oil can worked loose from its fastening and Beatty was forced to come down. He landed at Bayside, and after fixing the trouble started off again. Beatty passed over Long Island City and the East River at a height of about 2,000 feet. It was nearly dark and Beatty was half frozen with the cold when he reached Manhattan, so that he decided to postpone his return until the next day. Beatty is likely to get into trouble with the Aero Club of America for his over-city flight.

Early the next day, Wednesday, Beatty returned to Nassau Boulevard. The weather conditions were perfect when the aviator left the park. It was cold, but there was little wind. Beatty, climbing in a spiral, did not shoot off in the direction of Long Island until he had reached an altitude of nearly 2,000 feet. At this height Beatty encountered a mist and he had to find his way home by compass. Over Hempstead Plain he picked up the spire of the Cathedral at Garden City. The minimum temperature shown on Beatty's thermometer was six above zero. So cold did the pilot become at one time that he was forced to take his hands off the levers and rub them together. After he had thawed out, the arctic aviator took up a number of passengers for rides.

Charles E. Horton, of Flint, Mich., one of Beatty's pupils, was flying in the machine later when the crank case broke 800 feet above the earth. Though a novice, Horton made a perfectly safe volplane to the field. This accident put a stop to Beatty's flying for the week.

James E. Spainhour, of Pittsburgh, Pa., has taken a hangar at the Mineo, Pa., field. The newcomer says he will commence to assemble next week a new type of biplane which he hopes will "electrify New York."

SPACE TAKEN FOR NEW YORK SHOW

The First Annual International Aeronautical Exhibition, which is to be held in Grand Central Palace, New York, May 9 to 18 is inducing American manufacturers to provide exhibits. Space has already been contracted for by the builders of aeroplanes, motors and accessories. The Curtiss Aeroplane Company, of Hammondsport, N. Y., has taken a space of 2,300 square feet and will exhibit all types of hydroaeroplanes and aeroplanes, as well as motors and accessories manufactured by this company.

Among the other firms which have already contracted for

space are: Gallaudet Engineering Company, F. O. H. Schwartz, Goodyear Rubber and Tire Company, Frontier Iron Works, B. F. Goodrich Company, MaxAms Machine Company, H. W. Jacobs, Baby Engine Company, Gyro Motor Company, Sloane Aeroplane Company, Aero Construction Company of New York, Holland Aeroplane and Motor Company, Roberts Motor Company, W. A. Crawford-Post and B. F. Sturtevant.

FOWLER COMPLETES HIS LONG JOURNEY

JACKSONVILLE, FLA., February 12.—Robert G. Fowler completed his flight from the Pacific to the Atlantic coast when he landed at Jacksonville, February 8. On that day he traveled 165 miles in his model B Wright.

Leaving Quitman, Ga., at noon, he flew 28 miles to Greenville, Fla., and after circling that town three times he went on to Madison, Fla., which he treated in the same way and headed for Live Oak, Fla., where he landed at 1:10 p. m. Following an exhibition at Live Oak, Fowler flew to Mont-crief Park, Jacksonville, a distance of 82 miles, in 90 minutes.

Fowler was sighted about six miles west of Jacksonville at 4:27 p. m. by a wonderfully enthusiastic crowd. Even Max Lillie and Harold Kantner, who were giving an exhibition, were so excited that they could not get into their machines quickly enough to fly out to meet the trans-continentalist.

Lillie was the first off the ground in his model B Wright, followed immediately by Kantner in his Moisant monoplane. They flew about four miles and after greeting Fowler by circling around him, they escorted him to the field. Lillie landed first to show Fowler the way.

Then Fowler gave an exhibition, consisting of short circles, dips and rolls that made the big crowd gasp with wonder. He finally landed, followed by Kantner.

When the yells of enthusiasm subsided Fowler's manager, Charles L. Young and Frank Gotch, champion wrestler of

try for the 1912 Gordon Bennett cup race. Soon after the Wrights had legally restrained Grahame-White from flying at the recent Los Angeles meet, word was received from abroad that there was little likelihood of any foreign aviator taking part in this year's contest, and the Aero Club, fearing that either France or England would organize another international speed race, sought to change the attitude of the Dayton inventors. It is now expected that challenges will be received before March 1.

PAGE FINDS BAD WEATHER AT SEA BREEZE

SEA BREEZE, FLA., February 14.—Although there has been little good flying weather here since the first of the month, Phillips Ward Page, the Burgess hydroaeroplane instructor, has been able to make several flights during the past week. On February 3 he took out as passenger, Miss Elsa Merz, a guest at the Hotel Clarendon, and was able to give his pupil, John F. Gray, one lesson. On February 2 he took out Dr.

Left to Right:—F. ALBERT, C. L. YOUNG, ROBERT FOWLER, FRANK GOTCH.

the world, and F. Albert, Lillie's managers, met the aviator and congratulated him.

Fowler was suffering with the cold from having been so long in the air, traveling at an altitude of 3,500 feet to be on the safe side in case of motor stoppage. He had to travel over territory that consisted of swamps and forests. The landing was made at 4:47 p. m.

The evening was spent at the Seminole cafe where Fowler was made the guest of honor of Champion Gotch and Young.

WONT RESTRAIN FOREIGNERS

NEW YORK, February 15.—Wilbur Wright has given a written assurance to the Aero Club of America that his company would refrain from bringing injunction or other legal proceedings against any foreign aviator who came to this coun-

PATRICK GRANT (LEFT) AND PHILLIPS PAGE AT SEA BREEZE.

Calvin T. Adams and Frederick H. Cole of New York.

On February 8 the weather was again good. Henry Lee Hattemer of Montgomery, Ala., reported to begin lessons and took his first. On February 9, Grant, Gray and Hattemer all had lessons.

This week there was no flying until Tuesday, when Page took out Miss Amy Lyman Phillips. Cole had a second flight, while Gray and Hattemer each had two lessons the same day.

The Burgess hydroaeroplane is housed in a hangar on the beach near the Hotel Clarendon.

NEW CORPORATIONS

Hydroaerocraft Corporation, Chicago, Ill., \$500,000. To manufacture and deal in flying machines, etc., Horace P. Keane, Robert Middlekauff and Hugo S. Grosser, incorporators.

The Curtiss Exhibition Company has signed a contract with the Huntsville Baseball Association for flights at Huntsville, Ala., April 6.

INTERNATIONAL AVIATION CUP DEFENDER DESIGN

By E. R. ARMSTRONG

In the design of an aeroplane, five different quantities must be considered, the speed through the air, total weight in order of flight, power required, surface of support and head resistance including skin friction. To arrive at the correct relationship of these elements that the design must have in order to produce an aeroplane capable of the highest speed, is the problem under consideration.

The speed attained in the last Gordon-Bennett race was about 80 miles per hour, recently the world's record was broken when the speed attained was more than 93 miles per hour, with a 70-horsepower motor. There is no reason to doubt the assumption that the winner of the next race must be able to exceed a speed of 100 miles per hour. As a starting point in the design, it is necessary to assume that the proposed machine shall have a speed of at least 110 miles per hour.

The efficiency curves as given by Eiffel for the different wing areas and sections of the Bleriot, Nieuport, Tatin, Brugué and R. E. P., show but a small variation, hardly more than 15 per cent difference between the least efficient and the best. That is to say, when these different wing sections are compared, they will lift about the same with equal head resistance, although they may be travelling at different speeds and have different angles of incidence. Generally speaking, the higher the speed the less the camber of the wing and angle of incidence necessary for support, so that the higher the speed the less power required for support. This is clearly shown in Fig. 29 on the design chart by curve No. 1, where the resistance of the planes becomes less and less as the speed is increased. The great difference in speed of the different machines, in relation to horsepower, is generally the difference in the head resistance.

Fig. 29.

Fig. 28 shows the lift and drift of the section adopted as the most suitable for the present design, the results being given from existing machines it is estimated that at a maximum, in pounds per square foot at a speed of one mile per hour.

the total weight of the machine, with pilot and fuel necessary for a flight of one and one half hours, will not exceed 1100 pounds. The maximum loading per square foot is assumed to be 10 pounds per square foot, which gives as the total area of the main planes 110 square feet.

Fig. 28 shows that the maximum angle of incidence possible with the type of wing section adopted is 15 degrees, at which angle the lift is .0024 pounds per square foot. It is now necessary to know what is the minimum speed that will give a support of 10 pounds per square foot. When .0024 is multiplied by such a multiplier of Fig. 16 that the result is equal to 10, then the speed opposite such multiplier is the slowest speed possible for the proposed monoplane. In the case under consideration the speed is found to be about 65 miles per hour.

It is now necessary to lay out the design chart illustrated in Fig. 29, to show the different resistance and power curves in such a way as to keep clearly in mind the various factors and their bearing on the whole design. The first curve to draw on the chart is the curve showing the plane resistance (curve No. 1) showing as it does the head resistance of the main planes at different angles of incidence and such speed in miles per hour that will give a support of 10 pounds per square foot for a total area of 110 square feet.

At 15 degrees the drift is .00057 pounds per square foot which, when multiplied by 4225, the multiplier of 65 miles,

gives the resistance of 2,408 pounds; this multiplied by 110, the number of square feet in the planes, gives as the total resistance of the planes at the speed of 65 miles per hour, 265 pounds. The lift at ten degrees is .00202 pounds with a drift of .00028 pounds. Ten divided by .00202 equals 4,950, multiplier of about 70 miles; 4,950 multiplied by .00028 and the result multiplied by 110 gives 151, the resistance of the planes at 70 miles per hour at an angle of 10 degrees, at which speed the support will be 1100 pounds. Proceed in this manner and calculate the resistance for the different speeds up to 120 miles, as shown in the aeroplane chart, Fig. 29.

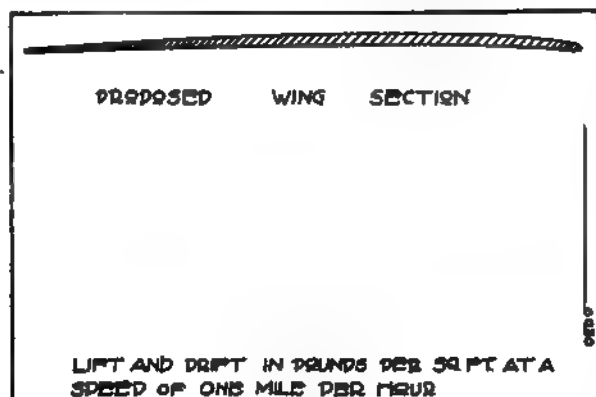


Fig. 28.

It has now been determined that, for a speed of 110 miles per hour, 110 square feet of surface is necessary to support 1100 pounds at an angle of incidence of about $3\frac{1}{2}$ degrees. To support this weight, at that speed, will require about 30 horsepower, if an efficiency of 70 per cent of the propeller is assumed. If the horsepower required for flight were only necessary to support the weight, speeds of 200 miles per hour would appear feasible, as the actual power necessary for support decreases with the increase of speed. Increase in speed is only a matter of decreasing the head resistance of the body and other essential parts of the machine. In the past the body design has been made to conform to the shape of the motor, and in almost every case is much larger than that necessary to contain the aviator and all controls. In the present design the cross section of the body is that necessary for to contain the aviator, the motor and all accessories being so located in the same body so as not to set up any additional head resistance. Such a cross section of the body will be the least possible for any aeroplane as the dimensions adopted are based solely on the size of the pilot.

Fig. 29 shows the plan, elevation and side view of the design, no attempt is made to show the structural features, as this series of articles has to do only with the size and arrangements of the different elements of the aeroplane. It is now necessary to estimate the head resistance of the different parts of the design as shown in Fig. 29. This is done by taking each exposed surface separately, correcting for shape and length to breadth ratio and adding them all together to represent the total head resistance of a single surface, placed normally to the line of flight. By the use of the diagrams and figures previously given*, calculate the head resistance of the body, tail, elevators, rudder, skid wheels, guy wires, posts, axle and aviator's head. The resistance found in this way is calculated to be equivalent to less than four square feet of normal surface.

Using this amount as the area of head resistance, calculate the resistance at the different speeds by the use of Fig. 3, as shown on the design chart by curve No. 2, Fig. 29. This curve shows the total head resistance of the machine, other than the plane resistance. The plane resistance is added to the body resistance, giving the total resistance as shown in curve No. 3. The chart also illustrates the speed of flight in feet per minute. If the resistance is pounds, at a given speed in miles per hour, is multiplied by the equivalent speed in feet per minute and the result divided by 33,000, it will give the necessary horsepower required at that speed. This has been done for the different speeds and resistances and is shown in curve No. 4, as the horsepower required. From this curve it is seen that about 65 effective horsepower is required

to maintain a speed of 110 miles per hour. If an efficiency of 70 per cent is assumed for the propeller, at least 93 horsepower will be necessary for horizontal flight. In order to have a reserve of power and provide for climbing, a motor of at least 120 horsepower should be used. Assuming that the motor selected will give that power at 1,200 revolutions per minute and that its power is proportional to the speed, the horsepower available is next plotted by taking the power at a given number of revolutions. Correcting, for the assumed slip of the propeller at that speed, will give the speed of advance at the number of revolutions considered, the power being corrected for the efficiency of the propeller. For instance, at a speed of 1,000 revolutions per minute, the power of the motor will be 100 horsepower, which, at 70 per cent efficiency, will be 70 effective horsepower. The propeller is 8 feet, 6 inches diameter with a pitch of 11 feet, 6 inches, of which the assumed slip is 28 percent, so that the speed of advance will be 11,500 feet, less 28 per cent, which gives 8,280 feet as the speed of advance, or 94 miles per hour. At this speed the motor and propeller will be giving 70 effective horsepower. Proceeding in this manner, the effective horsepower curve is drawn for different engine speeds up to and including 1,300 revolutions per minute. This curve is shown as No. 6, in Fig. 29.

Curve No. five, showing the gliding angle is next plotted. This curve shows the gliding angle in degrees and as a ratio of the distance descended to the distance traveled in a horizontal direction. It is obtained by dividing the total weight by the total resistance at the different speeds and shows the best possible gliding angle for the different speeds. The curve shows the best gliding angle to be about $9\frac{1}{2}$ degrees, at a speed of 85 miles per hour. The chart also shows that, at a speed of about 95 miles per hour, there is a reserve of about 25 horsepower, which will permit a climbing rate of about 700 feet per minute. The chart also shows that the proposed design should be capable of reaching the extreme speed of 120 miles per hour.

Too much time and attention cannot be devoted to the study of the design chart, showing, as it does, the inter-connection of the various elements and their effect upon one another.

CORRESPONDENCE

Inquiries addressed to the Editor of AERO will be answered as promptly as possible in this column according to the order of receipt. Technical inquiries cannot be answered by mail. The name and address of the writer, not for publication, should accompany questions. Correspondents communicating in regard to letters or answers to queries that appear, will facilitate matters by giving the reference number. The publishers are not responsible for opinions of correspondents.

Queries Briefly Answered

[1054] J. H. M., Baltimore.—*Le Triomphe de la Navigation Aérienne* by Count Henri de la Vaulx is published in the French language only. The book department of AERO can supply you with a copy.

[1055] R. L. R., Sunbury, Pa.—The aviation school of the Wright Company is at Dayton, Ohio. See advertisement in AERO.

[1056] F. S., Odgensberg, N. Y.—The Demoiselle monoplane is usually fitted with a two-cylinder 30-horsepower motor, 7-foot propeller with a 6-foot pitch. The spread is 18 feet and length 20 feet. No one in this country has ever made a long flight on this machine.

[1057] T. W. B., Birmingham, Ala.—The newer gliders are controlled laterally by means of ailerons or wing warping, which is much more effective than balancing by shifting the body. The larger gliders are fitted with wheels rather than skids. It is very dangerous to tow a glider with a single line, many bad accidents have been caused by this method. A line attached to either end is much the safest. The possible angle of flight of a glider depends on the total weight and the head resistance. Under normal conditions you should be able to glide at an angle of about one to five.

[1058] B. E. K., Hattiesburg, Miss.—The propeller shown on page 266 of *Vehicles of the Air* is drawn to a scale of about two inches to the foot. The design given is not suitable for an aeroplane, owing to its low pitch.

[1059] C. R. H., Woodlawn, Ala.—A monoplane with two

*"How to Design a Modern Aeroplane," AERO, Vol. III., Nos. 15 to 20 inclusive.

propellers in front, driven by chains as in the Wright machine, could be designed to be more efficient than the present arrangement. The additional complication, however, would more than offset the advantage, owing to the structural difficulty of adapting the necessary framework to a monoplane.

Wants Board of Investigation

[1060] If the tone of this letter seems a little acrid, it is because the writer feels his inability to do the subject justice. I speak for the army of New England inventors, whose efforts are being obscured by lack of means to promote them. If aero clubs and societies were formed for any purpose other than that of advertising the positions of their members, New England would not deplore its lack of talent, as it now does.

These men are not all Tillinghasts nor Harrimans—men who must needs, in contempt for the efforts of Langley, Cha-

nute and others, fly off at a tangent into the realms of a well-nourished imagination. These men of New England are the men who have helped to create and develop the automobile and the motor-boat, and whose efforts are founded upon established principles, and whose brains are on a par with any in the world.

And, yet, if such a man seeks recognition in the sacred circles of aviation, he is confronted with the alternative of purchasing a course in some flying school as an apprentice, or if submitting gracefully to the exclusion which is, as delicately as possible, accorded him by some "professor" who knows as much about mechanical flight as Noah.

Why not be sincere in their declared motives, and provide a Board of Investigation for undertaking this work? It is a worthy cause and will prove a prolific investment.

WALTER W. WRIGHT.

WEIGHT-CARRYING IS CHIEF ARMY REQUIREMENT

By J. W. Mitchell.

WASHINGTON, February 17.—The Signal Corps contract for five new aeroplanes will bring the present government fleet up to 11. Four of the five new machines will be Wrights and the other a Burgess-Wright. One speed machine is to be built by the Wright Company and will have a minimum speed of 65 miles an hour. The rest of the machines are to be slow-going weight carriers. They are to carry two persons and a fuel supply for four hours, making a total load of 450 pounds. If the carrying capacity is increased to 600 pounds they will be accepted at 38 miles an hour. With the lighter load they must make 45 miles. With 450 pounds they are required to climb 2,000 feet in 10 minutes. If they carry 600 pounds their climbing speed may be as low as 1,600 feet in ten minutes.

The following are the official specifications:

1. It must carry two persons with the seats so arranged as to permit of the largest possible field of observation for both.
2. The control must be capable of use by either operator from either seat.
3. The machine must be able to ascend at a minimum rate of 2,000 feet in 10 minutes while carrying a weight of 450 pounds, and the amount of fuel stated in paragraph 4.
4. The fuel supply must be sufficient for at least four hours of continuous flight.
5. It must be easily transportable by road, rail, etc., and easily and rapidly assembled and adjusted.
6. The starting and landing devices must be part of the machine itself, and it must be able to start without outside assistance.
7. The engine must be capable of throttling to run at reduced speed.
8. The engine will be subject to an endurance test in the air of two (2) hours continuous flight.
9. The aeroplane must develop a speed in the air of at least forty-five miles an hour.
10. The machine must be capable of landing on and arising from plowed fields.
11. The supporting surfaces must be of sufficient area to insure a safe gliding angle in case the engine stops. This will be determined by a test during calm atmospheric conditions. At an altitude of 1,000 feet the engine will be entirely cut off and a glide made to the ground. The horizontal distance between position of cut-off and landing must be at least 6,000 feet, or at other altitude of the same ratio.

Note:—In case the weight carrying capacity is increased to 600 pounds, the minimum speed may be reduced to thirty-eight miles per hour, and the climbing power diminished to 1,600 feet in ten minutes.

The Navy has apparently inclined more to the Curtiss type and has all of the loose navy aviators at San Diego watching and helping in the experiments with the new Curtiss hydro. Like the army the navy is convinced of the necessity of the two-man control and even consider having the control standardized on all government machines. It is a question whether the advantage to be gained is very great.

The navy has adopted log books for all its aeroplanes.

These will keep a record of weather conditions, the flights made, if any, on a given date and any special information that may be valuable. One of these books will be kept with each machine and a duplicate in the files of the Navy Department. The book is the loose leaf sort and all official correspondence, orders and the like can be inserted. This tends to make each aeroplane independent, like a miniature warship.

The navy is greatly elated with the new Curtiss hydro and is preparing to build one of its own on its own design, but government undertakings of that sort move slowly. W. Brookins is also experimenting with a new hydro body that is said to be like a small torpedo boat or a large torpedo.

It may be of interest to his host of admirers to know that Brig. Gen. James Allen, Chief Signal Officer and father of aviation in the army, celebrated his 63rd birthday on February 13. This puts him within a year of retirement, but it is a fact that he does not look like he's more than 45 or 50. This cannot be laid entirely to the credit of aviation, as he began looking young before he developed an interest in aeroplanes.

GAGE SETTLES AT GRIFFITH FIELD

LOS ANGELES, CAL., February 10.—Jay Gage, the Los Angeles aeroplane builder, has leased ground at Griffith aviation field and is erecting a factory and will operate a flying school in connection. Lumber is on the ground for a building 50x75 feet. A wood-working plant, forge and nickel-plating shop are included in the equipment.

Gage is experimenting with an improved double-tractor screw biplane which up to the present has given excellent results. It is 40 feet spread and 6 feet chord, the planes being 5 feet apart. The ailerons are in the rear of the planes. The fuselage, engine mounting, seat and controls are all in one unit when the machine is knocked down for packing. The elevator surface is 12x12 and in front of this is a jib 6 feet long tapering from 12 inches. The vertical rudder is 2 by 4 feet. Farman landing gear is used with the addition of two long skids in front. A four-cylinder Hall-Scott motor drives the 8½ foot propellers which have a pitch of 8 feet and are geared 2½ to 1. The machine has carried two persons comfortably and in one case lifted four persons from the ground to a height of four feet for a distance of 50 feet.

Gage this week completed a large order of parts for the new biplane which Weldon B. Cooke is building at Oakland.

QUEEN PASADENA FIELD RETAINED

PASADENA, CAL., February 10.—With ideal flying weather and one of the best fields in southern California at hand, the amateurs of this city are preparing to try out a number of aeroplanes which will soon be completed and ready for service. The Board of Trade has decided to keep the 160 acre field originally acquired on a five-year lease for the use of the Queen Aeroplane Company, open for the use of aviators who care to keep their machines there and the body has signified its intention of building hangars free for their use.

E. PERCY NOEL, Founder-Editor

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The Editor is pleased to consider MS and photographs for publication, but only material that is likely to prove of interest to the readers of Aero. The Editor cannot undertake to answer technical inquiries except in the columns of Aero.

SPORTSMANSHIP

As a spectacle, it always falls short of the average expectation, unless the spectator is looking for accidents, but a tremendous amount of interest centers each year upon the outcome of the race for the *Coupe Internationale d'Aviation*, as James Gordon Bennett named the trophy which he presented to the Aero Club of France, four years ago. As a sporting event, it should have no peer. Undoubtedly, the risk each contestant incurs influences the interest, but the fact that the race is supposedly an international competition, in which the brains and skill of the nations represented are tested, arouses patriotism.

This year it is announced that the Wright Company will not interfere with aviators competing. Whether this means that the Aero Club, of America has conceded another point in the case of the Wright Company for the legality of its patent claims, is a matter for lawyers to discuss. It is not announced that any money is to be paid for a promise of neutrality.

It was fairly certain that few foreign aviators would come to this country to compete in the race if they were to suffer the expense and humiliation of lawsuits or temporary injunctions. It is now a question whether the Wright Company agreement refers only to the cup race itself, or to the events to be run in connection with it as well.

If the cup race is the only event affected by this agreement, it is doubtful whether many foreign fliers will come to this country for it. There is not enough money in winning that event alone to warrant a display of their sportsmanship on this side of the water.

From its attitude last year in regard to conceding one point favorable to the alleged patent infringement suits of the Wright Company—to which stand there has not yet been an unsatisfactory outcome—it seems that the International Aviation Meet Association of Chicago will not accept a Wright license for the general meeting to be held in connection with the cup race.

In view of this, it has not yet been decided whether the race will be held in Chicago. For another reason, in which financial backing is a consideration, it will probably not be held in New York, so that whatever the stand of the Meet Association of Chicago, it will probably conduct the race.

With such a good prospect of the cup event and the subsidiary contests being held in a sportsmanlike manner, with due consideration for the present and future of aviation in America, it will be a pity, indeed, if the team of cup defenders—with the possible exception of Charles Terres Weymann, who won the cup for America last year on a French machine—drive other than American-made machines, fitted, if possible, with American-made motors.

It is certainly not such a difficult matter to produce American speed machines that will equal, if not outstrip, the machines built abroad, and if any liberal enthusiast is planning to spend money to bring foreign machines or Americans of foreign training to this country for the race, he is not planning anything that will really benefit his own country.

A supplemental cash prize of the amount that might thus be spent abroad in an effort to win the cup for America, offered to the American builder whose machine should defeat the foreign contestants, with a smaller special prize for the aviator who pilots it, would work wonders.

Among the Aviators

Charles Broadwick, a well known balloon man, has taken hangar, space at the new Griffith aviation park, Los Angeles. Broadwick has purchased a Curtiss-type plane from Shirley McElms and Edward Barnhardt, amateurs of Pasadena and intends to install a Hall-Scott power plant.

Charles H. Paterson, the San Francisco aeroplane builder, made a three-quarter mile flight here today. He recently purchased from Rex Young a Curtiss biplane equipped with a four-cylinder Curtiss engine.

Ivy Baldwin, of Alameda, Cal., has completed a Curtiss-type biplane and has shipped it to Elmhurst, Cal., where he will try it out within the next week. An 80-horsepower Frederickson motor will be installed.

Weldon B. Cooke was the guest of honor at a banquet given in the rooms of the San Francisco Press Club, by the members of the Pacific Aero Club on Friday evening, February 16.

The California Aviation Company is building a triplane after designs by B. S. Unerara, a Japanese of Oakland, Cal. He has purchased a four-cylinder Elbridge motor which he will install.

Didier Masson is completing a military biplane at the shops of the Aeronautical Corporation, San Rafael, Cal., and will attempt to fly over the Sierras when it is completed.

Gus Seifreid is having his standard Bleriot monoplane tuned up at the shops of the California Aviation Company. The wings are being recovered and the fuselage repaired. When ready for service he will try out at the new field leased by the company.

John Zinon Posadas, of Guatamala, has installed a new 50-horsepower Hall-Scott in his Wright-type machine. He is also having a new Wright-type plane built by the California Aviation Company, 45 feet wide, with 7 foot ribs. Posadas flies for pleasure and is not in the exhibition game. When the new plane is completed he will take it to his coffee plantation in South America for use.

George A. Van Ofen and H. Francis are having a Curtiss-type biplane constructed at the shops of the California Aviation Company. It will be equipped with a four-cylinder Maxmotor, and a C. A. C. propeller.

Roy Francis, in a Gage biplane with Hall-Scott power plant, and Frank Bryant, with a Standard Curtiss equipment, made five flights at Tulare, Cal., February 11, before a large crowd of people. The aviators were in the air about two hours and at times attained altitudes of 2,000 feet.

Harry N. Atwood is working on a new type of propeller, the specifications of which he refuses to make public. He has made a careful study of existing types and believes that his propeller will be more efficient than those in use at present.

In a prominent place at the motor truck show in Boston last week was shown a Bleriot-copy monoplane, constructed by E. P. Miller of this city, assisted by Alfred F. Gay of Avon, a suburb. Miller plans to make a flight in the monoplane at the conclusion of the show.

The manufacturers of the famous Trebert marine engine are about to put on the market a six-cylinder, valveless, four-cycle, revolving cylinder motor.

By spring the American Aeroplane Supply House expects to have three or four Bleriot-type monoplanes of new model ready for immediate delivery. A 75-horsepower Roberts was installed in the monoplane designed by Z. H. Garcia, of the Dominican Republic. The 1912 A. A. S. H. catalogue will be ready about February 20.

John D. Cooper made three successful flights in his Emerson engined Pine biplane of the Curtiss-type, at Gainesville, Texas, February 14.

In AERO, February 10, the National Aeroplane Company of Chicago, was referred to by our Galveston correspondent as the Chicago school of aviation. To people in Galveston it is a Chicago school, but readers of AERO are already familiar with the fact that the National Aeroplane Company is operating the only aviation school at Galveston.

Capt. Patrick Hamilton, of the British Army, who took part in the Nassau Boulevard meet last summer, and who has recently been flying in Mexico with the Moisant aviators, is now in New York. He will shortly depart for England on his way to India. Capt. Hamilton has been associated with George M. Dyott in the operation of two Deperdussin monoplanes.

Augustus Post has been giving lectures with moving pictures in a Fourteenth street, New York, vaudeville house. Post is not lecturing for mere cash. He says he wants to teach the people the mysteries of flying. He has lectured at Yale, Harvard, Rutgers and Armherst, and at the New York Yacht Club, the Engineer's Club and the Converse Club in Philadelphia, but thinks that missionary work is more needed amongst the people who attend moving picture shows.

Charles K. Hamilton, with a bandaged neck and his right arm in a sling—souvenirs of a recent fall at Galveston, Texas—has been in New York to purchase a powerful motor for his reconstructed biplane.

Lieut. Jacob E. Fickel, 22nd Infantry, stationed at Governor's Island, N. Y., has been assigned to the United States Army Aeronautical Division. He is going to St. Augustine, Fla., to learn to fly at the army aviation school.

In an aeroplane of his own construction, tried out for the first time on the ice in Jamaica Bay, Long Island, last Wednesday, Edward B. Novieselski, of Ozone Park, ran into several piles, badly smashing his machine and fracturing his nose.

SAN DIEGO CLUB ELECTS OFFICERS

SAN DIEGO, CAL., February 10.—At a recent meeting of the Board of Directors of the Aero Club of San Diego, the following officers were elected for the coming year: D. C. Collier, president; D. M. Warner, first vice-president; E. J. Chapin, second vice-president; F. W. Jackson, treasurer; F. T. Searight, secretary and B. H. Vreeland, financial secretary.

There is talk among the members of a meet to be held at the polo grounds at Coronado sometime in March, but it is stated that the plans are too indefinite to publish at the present time. The presence of the Curtiss and United States Navy training schools in San Diego has acted as a decided stimulus to the aviation game during the winter and has been the means of attracting a great deal of attention to the city. At the present time there are a number of amateurs building planes here and it is expected that some of them will be ready to try out soon. There are 15 pupils at the Curtiss camp.

A little incident in connection with the trials of the Curtiss hydro by Lieutenants Ellyson and Rogers occurred one morning recently, which brought into sharp contrast the various types of fighting craft, past, present and future. A large four-masted sailing vessel, unarmed of course, but presenting a fair picture of the earlier frigates was anchored on one side of the stream. While the officers were making a run over the channel, one of the latest type submarine quietly made its way from the torpedo station to the entrance of the harbor, passing the sailing vessel at the exact time that Ellyson steered his hydro over the water. Many hundreds of tourists who were on the water at the time witnessed the little scene and it was commented on at both Coronado and in this city many times during the days following. Many persons have made it a point to be in the vicinity since in the hope of again seeing the three crafts together, but it will probably be a long time before a similar meeting will again take place.

I have been reading AERO about a year and think it by far the best publication of its kind.—EUGENE G. HILL, San Diego, Cal.

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E. Percy Noel,
 Secretary.

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BULLETIN

Social Meeting, Saturday, February 24

The Technical Committee will hold an informal open meeting at the club quarters at 8 p. m., Saturday, February 24. All members of the club and their guests are invited to attend. There will be some serious talk, but the main object is "getting together."

PARACHUTE TRIED ON AEROPLANE

KINLOCH, ST. LOUIS, Mo., February 19.—Experiments were tried last week to test the practicality of embarking from an aeroplane in a parachute. Antony Jannus, using a Benoist biplane, carried Albert Berry, a parachute-jumper, while the latter was suspended from the parachute bar. Berry says that he will make a jump in this way next Sunday. Such an experiment was planned yesterday but had to be called off.

The parachute is carried in a metal cone attached to the running gear of the aeroplane. Weights of 53 pounds have been dropped from the air successfully.

Intercollegiate Aeronautical Association

Annual Meeting of the Association

According to present plans, the annual meeting of the Intercollegiate Aeronautical Association will be held in New York, at a place which will be designated later, on Friday and Saturday, April 12 and 13. Officers will be elected for the ensuing year and other business relating to the college aeronautical movement will be taken up.

This meeting will be open to every college club in existence at the time it is held, and it is hoped that every club will put forth its best efforts to send at least one delegate. An important consideration is that all of the officers to be elected be good active workers and now is the time to thoroughly canvas the field for the right kind of men.

In order to facilitate the business of the meeting, the association will be glad to receive, at any time, suggestions as to questions which should be taken up for discussion. Two years of experience have indicated that slight changes in the method of governing the association might work an advantage. Practical plans for increasing the interest of college men in the aeronautical movement are also desired.

The Cornell Club has suggested that, inasmuch as this spring will see the association handling several big meets, it might be well to hold the annual meeting a month or so earlier, with a view to doing all that is possible to arouse the interest of those clubs which are falling by the wayside, and thus to make the entries in the meets much bigger. Letters of inquiry in regard to this are being sent out by the Cornell Club, but the association itself will be glad to hear whether or not this change would be favorably received.

Second Annual Intercollegiate Gliding Meet

The Intercollegiate Gliding Meet will be held this year at Ithaca, N. Y., under the auspices of the Aero Club of Cornell University. Invitations to participate have been sent out to all the college clubs. Correspondence relating to the gliding meet should be addressed to Kerr Atkinson, corresponding secretary, Cornell Aero Club, Cascadilla Building, Ithaca, N. Y.

Second Annual Intercollegiate Balloon Race

The second annual intercollegiate balloon race will be held under the auspices of the Intercollegiate Aeronautical Association, through the courtesy of the University of Pennsylvania Aero Club, which has relinquished its right to same. This race, which was held under the auspices of the Williams Aeronautical Society last year, was won by Pennsylvania.

The starting place of the race will be Kansas City. Arrangements have been made by which the Kansas City Aero Club will furnish each balloon with free gas and in addition will allow each balloon making a start \$100 in cash, to help defray the expenses of coming to Kansas City. In addition, all of the contestants are promised a royal good time while they are in that city.

Owing to the fact that so few of the college men have had ballooning experience, the rules allow of any pilot being used, whether or not he is or has been connected with the college which he represents. Balloons can be rented at a very reasonable figure, and full information in regard to this will be furnished on application.

Kansas City is an ideal place to start. Excellent gas, claimed to be the best in the country, is to be had, and there is a good opportunity to break the world's record for distance. Those who took part in the international race last summer speak most highly, not only of the gas and facilities, but of the splendid treatment which they received at the hands of the Kansas City people.

Last year only three colleges competed in the race—Williams, Dartmouth and the University of Pennsylvania. This year definite entries have been received for Princeton, University of Virginia, University of Pennsylvania, Dartmouth, and Percy Shearman, who piloted the Williams balloon last year, has signified his willingness to go to Kansas City, although a formal decision has not yet been received from the Williams Club. There is no reason why there should not be at least 10 balloons ready to start when the race is called.

The college aero clubs are requested to send in their entries as soon as possible, so that all the necessary arrangements can be made in plenty of time. As mentioned before, all those clubs which desire to rent balloons will be referred to the proper places and those who look after this first will of course get the best choice of available balloons.

The date of the race has not yet been definitely decided, but it will fall the latter part of June or the first few days of July. This will be after commencement at all the colleges, which will enable all the men who so desire to take part in the race and, besides, weather conditions at this time will be most favorable.

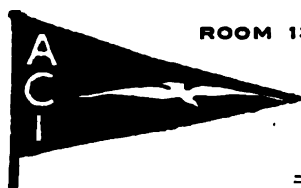
FOREIGN NOTES

S. F. Cody Carries Five.—S. F. Cody, the well-known English aviator and constructor, recently tried out his new five-seat biplane at Aldershot. During the test he carried four passengers beside himself, a total weight of 738 pounds, for a distance of about 7 miles.

A French Regiment of Aviators.—The new French minister of war is losing no opportunity of showing that he is fully alive to the value of military aviation, and he now proposes to create a regiment of aviators. The scheme has been approved by the French minister of war.

Germans Like the Deperdussin.—The builders of the Deperdussin monoplanes lately received a proposition from a German to build their machines under license, stating that if not granted a license that he would copy the machine, and put it on the German market, owing to the military value of the Deperdussin machine.

THE AERO CLUB OF ILLINOIS



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BULLETIN

Technical Conferences

There is being arranged by the Technical Committee a chain of engineering discussions which will alternate with the other meetings of the club of which several are held every month. These are the result of a well recognized demand on the part of those men technically inclined for better opportunities to interchange ideas and to achieve clearer understanding of the engineering problems of aviation.

It will be especially aimed to make these events of a popular nature in general, and as the series progresses to attack the more difficult problems connected with the subject. The value of the work will be enhanced by a systematization which includes a series of progressive related subjects to be handled by specially qualified authorities, and to be given possibly permanent form in printed sets of typical computations, examples of construction and essential formulae which may be secured by those interested more seriously.

Following is the immediate calendar of subjects the first of which will be capably handled by James S. Stephens, and in connection with which some other very well known names are under consideration:—

Session.	Date.	Subject.
1.	Wednesday February 28,	Historical and General.
2.	Wednesday, March 13,	Contemporary machines.
3.	Wednesday March 27,	Systematic design, conventional types.
4.	Wednesday, April 10,	Concrete illustrations of design problems.
5.	Wednesday April 24,	Comparative details and Criticism.
6.	Wednesday, May 8,	Evolved types, original ideas.

HAROLD W. ROBBINS,
Secretary.

Glider Division Holds Session

James R. Offield, who has made a special study of the glider problem will have addressed the meeting called for the 21st inst., Wednesday evening at the Auditorium Hotel, for the purpose of defining the work before this section of the Aero Club of Illinois. This session will be followed by others of a more technical nature going exhaustively into this very interesting subject.

It is planned to unite in this work all who have had, or expect to take active part in discussion, construction and competition in this field, and all of whom will be preferably members of the Aero Club of Illinois. Every glider enthusiast is invited to attend these sessions.

HAROLD W. ROBBINS,
Secretary.

International Race at Chicago

CHICAGO, February 17.—After previous separate and preliminary consideration the representatives of the Aero Club of Illinois, The International Aviation Meet Association and the Aero Club of America in combined session today at the

Auditorium, Chicago, gave definite form to an agreement to provide for the holding of the Gordon-Bennett Cup and the Grand Circuit of probably 1,200 miles, together with a several days' meet similar to the one of last year.

The Chicago organizations will raise \$50,000 to be used for these purposes in conjunction with the amounts supplied by such cities as Milwaukee, Omaha, Kansas City, St. Louis and Indianapolis, which latter will be devoted exclusively to the Grand Circuit prize. It is expected that all obstacles to the entrance of the famous foreign pilots will be removed so that the European clubs will be fully represented in the Gordon Bennett race, while the same or better machines will undertake the Grand Circuit endurance test.

The International meet of last year attained such enormous popularity that a similar series is demanded again the present season. The three events combined will, in all probability exceed all anticipations.

Recommendation to Aero Club of Illinois

GROVER F. SEXTON.

A field captain at the Cicero field, who is, himself a flier—if possible a licensed pilot.

A business manager to be employed the year round, burdened with no other work than the business management of the club, under direction of the executive committee.

Here activity at the flying field. Part of the proceeds of weekly matinee should be divided with fliers on a point system. Two large meetings should be held each year—one in the spring with an exhibition and a big meet in the fall in connection with other clubs as a circuit. The Gordon Bennett will come next autumn.

If this club is to be of any use to its members, it must arrange for better dissemination among its members of the latest science of aviation. To this end I would suggest: That the consulting engineer be head of the aerodynamics committee and be given funds for educational experimenting; that he arrange with the manager a series of educational meetings, wherein the why of the aeroplane be made clear by lecture and diagram, and hints and suggestions in a question box given; these might be held each week.

This club should set its face resolutely against fraud, deceit and misrepresentation, particularly in the conduct of so-called aviation schools. Many of them are founded with honest purpose, but until recently, at least, none near here within my observation was able to give what it advertised. Some of the schools are putting themselves in a position to demand and deserve public approval of the club. But I maintain that if this club is so firmly established that it feels it must wink at a lot of crookedness and misrepresentation because it is in the dawn of the science, it had better dissolve. It is a time of rich harvest, and the club should protect the non-member as well as the member, that aviation shall stand for clean, wholesome enterprise. It were better, in my judgment, that schools be made to give ample proof of worth before they are given recognition, or before they are allowed to operate in this club's territory unhampered. I have no one school in particular in mind.

Purchase a reliable aero motor of low power, to be rented to members for trials of machines.

Maintain at club headquarters a manufacturers' directory and encourage members to deal only with companies registered therein to the end that the power and influence of the club may be lent to insure square dealing for members. Special attention should be given to local dealers. There is at least one dealer here which has no superior in the United States for the quality of work on building aeroplanes. I have concrete evidence of it at the field. There is at least one dealer in supplies I know to be likewise trustworthy; at least one propeller maker of real merit. There must be more. We should have their names known and accessible.

Most of all, I do wish, however, to emphasize the extraordinary necessity that this club officially and actually—not theoretically—try to develop its own usefulness to members and to aviation in general, and not be a mere figurehead—that it wear overalls as well as white flannels, to the end that through awakened personal interest the white flannels in the club will be doffed for overalls and, through increased profit, the overalls of the club may be changed for white flannels.

Model Aeroplanes

Aviation Association of America

Individuals wishing to join and clubs desiring to affiliate with the Aviation Association of America are requested to communicate at once with the Temporary Chairman, Aviation Association of America, 606 Columbia Building, St. Louis, Mo. There are no dues. The object of the association is to encourage and regulate model and kite flying and gliding in America. Each member properly qualified will be furnished with the lapel emblem of the club. Notices of meetings of affiliated clubs will be published in this column. Additional names of individuals desiring to organize affiliated clubs are published below:



AERO OFFERS PRIZES FOR FLIGHTS

In order to promote interest in and to encourage competition with model aeroplanes, kites and gliders, AERO will offer a number of prizes for best performances during the present year. The first prize offered will be open for competition for March 1 to June 1, inclusive. They are as follows:

MODEL AEROPLANES.

Class A—Longest flight by a model made by the competitor.

First prize, \$5.00; Second prize, bound volume of AERO.

Class B—Longest flight made by a bought model.

First prize, \$5.00; second prize, bound volume of AERO.

Prizes for kites and gliders will be announced later.

The rules governing the competition are:

REGULATIONS.

1. Competitors must be members of the Aviation Association of America, into which no professionals, dealers or agents are admitted.

2. Competition flight must be witnessed by two observers, members of a club affiliated with the Aviation Association of America, or by two persons appointed by or acceptable to the association.

3. The statement of flight, giving date, time, distance and brief description of model flown, must be signed by contestant and the two observers. This statement, accompanied by a photograph, if possible, of the model, must be in the office of the Aviation Association of America, 606 Columbia building, St. Louis, not later than June 10, 1912.

4. In this first contest there will be no restrictions as to size of model, motive power, or age of contestant.



Desiring to Organize Clubs.—The following desire to organize clubs in their localities, which shall be affiliated with the Aviation Association of America, or will join already organized clubs which will be affiliated with the national body: California: Carol, R. 1, Box 362, 10th and Stanley, Long Beach, Cal. Connecticut: H. W. Ferris, 340 Orchard Street, New Haven, Conn. Texas: R. I. Trice, Route 5, Waco, Tex. Illinois: Leland H. Smith, 345 Packard street, Decatur, Ill., Everett Iles, 301 North street, Normal, Ill. New Jersey: Frank Simon, 41 Clinton street, Paterson, N. J.

Central Boys' Philadelphia Club Meets.—The Central Boys' Aero Club of the Philadelphia Central Y. M. C. A., held its third meeting, January 27. The entire club of 13 members was present. The officers elected were: Samuel Gerson, president; W. Palmer Lanagan, secretary and treasurer. The dues were made 25 cents a year. Tickets will be sold to a lecture to be given by Percy Pierce.

Praises A. A. A.—William P. Dean, of Schnectady, N. Y., writes: "I am a model enthusiast and won three first prizes and two second prizes at the two first model competitions in the northwest of England in 1910. I note your invitation to state views upon organizing a national association to govern model contests and I am very glad to find the value of model flying is receiving your attention."

Hits the Nail on the Head.—Harold Verity of Philadelphia, Pa., writes: "Seeing your notice in AERO, I would like to state, from my way of seeing things, you have hit the nail right on the head for the poor fellow who has the knowledge and enthusiasm but not the cash to make or construct full-sized machines and has to be contented with the models. In reference to the organization of a national association, I would like to say for one that I would work with all the energy that I possess to push the organization in my town."

Cypress Hills Club Organizes.—The Cypress Hills (L. I., N. Y.) Model Aeroplane Club held its first meeting January 16 and elected the following officers. Harry Echardt, president; N. Metzger, vice-president; J. F. McMahon, secretary; Lester Ness, treasurer. It is the idea of the club to teach the science of model aeronautics. The monthly dues are small. The secretary's address is 3321 Fulton street, Brooklyn, N. Y.

To Organize St. Louis Club.—The meeting to organize a model club in St. Louis will be held Thursday evening at 7:30 p. m., February 29, at the quarters of the Aero Club of St. Louis, room 606 Columbia building, St. Louis. About 30 enthusiasts have agreed to be present.

New Jersey Contest, February 22.—The Model Aero Club of New Jersey met at the Y. M. C. A., Newark, N. J., February 9. R. P. Foster, president was in the chair. The Contest Committee, composed of Fred Witsell, chairman; E. Phelps Soti and F. Walton, announced that there would be a contest on Washington's Birthday. A handsome medal was offered by Edward Durant, honorary member.

Terre Haute Meet Held.—The size of the hall interfered with long-distance flying at the meet of the Aero Club of Terre Haute (Ind.), held February 9. Victor L. Tyler won the distance event, his front-rudder model flying the length of the hall and crashing into the wall; distance allowed, 68 feet. Donald Tyler, age 12, won the altitude event with 20 feet. Paul Ernisch won the spectacular flight. Mac Elhany won the speed event with a glider. V. Tyler won the accuracy in landing event for powered models, Elhany winning in the glider class. An out-of-doors meet will be held as soon as the weather becomes more like spring.

New York Model Club.—Until further notice, and, provided the weather is clear with a temperature above 40 degrees Fahrenheit, the New York Model Aero Club will hold aeroplane model flight contests, for distance, every Sunday afternoon from 2 to 5 p. m. on the Ball Grounds at Van Cortland Park, New York, N. Y. The A. Leo Stevens "Year Trophy" will be competed for by starting the models from the ground under their own power. The Francis Arnold Collins Gold Medal will be competed for by starting the models from the hand. Each contestant may enter three models in each contest, and three trials are allowed each model. For particulars, address Nicholas Schloeder, secretary, New York Model Aero Club, 250 Fifty-fourth street, New York, N. Y.

New York Y. M. C. A. Offers Cups.—Three silver cups have been offered by the West Side Y. M. C. A. (New York, N. Y.) to encourage the study of aviation. The cups will be competed for in a series of model aeroplane contests to be held every two weeks. The awards will be made at the end of the current year. The first cup is for distance and accuracy indoors, the second for distance in the open and the third for duration out of doors.

Queries Briefly Answered

R. S., Meadville, California.—(1) To varnish silk, first stretch and stitch it on the planes, then apply a coat of good spar varnish on the under side. Leave the plane upside down until it dries thoroughly. The silk is so thin that the varnish will soak through to the other side, which need not be varnished. Another method is to stretch the silk in a large frame, varnish and allow it to dry. Afterwards it can be removed and attached to the plane. This method gives a covering free from wrinkles. (2) Birch may be procured from the model supply house or from your local planing mill.

L. E. W., Govans, Maryland.—The record you speak of has been exceeded by Percy Pierce of 5907 Osage avenue, Philadelphia, Pa., with 1814½ feet at Belmont, Fairmount Park, December 28, 1911. This is the American distance record. If you made your own model, your record of 518 feet is unusually good.

FOREIGN NOTES

Quick Training at Pau.—After only nine days' instruction at the Bleriot military school at Pau, Lieut. de Bernis qualified for his pilot's certificate, and 20 days after joining the school he made a flight of more than an hour at a height of 1,000 feet.

Practical Use of the Aeroplane.—Vedrines, the French aviator, was recently engaged to give some lectures on aviation. He used his Deperdussin monoplane to go to the different places where his lectures were given.

German Emperor Offers a Prize.—On the occasion of his birthday, the German Emperor offered a prize of \$12,500 to be awarded to the maker of the best aeroplane motor made in Germany. The prize will be awarded next January, 1913.

Louis Seguin Honored.—Louis Seguin, inventor of the Gnome motor which has done so much for aviation, was named a *chevalier de la Legion d'Honneur*, by the president of the French republic on January 1st.

Peugeot Offers \$2,000 Prize.—The Peugeot Company has offered a prize of \$2,000 to the first person to make a flight of 33 feet without a motor. The terms of the contest require that the flight must be made over the course of 33 feet in both directions, but with a period of rest between the flights. The power for flight must be the muscular energy of the aviator.

Killed Testing Parachute.—The Austrian tailor, Reichelt, who invented a special form of cloak parachute, tried out his invention on February 4 by jumping off the Eiffel tower, with fatal results. The area of his parachute was only about 60 square feet, when it should have been at least 300 square feet.

D. Graham Gilmour Killed.—According to cable reports, D. Graham Gilmour, one of the best-known British aviators, was killed in a fall in a new monoplane on February 16, while flying at the Brooklands aerodrome. He was testing out his new high-speed monoplane when it was seen to collapse in the air at a height of about 400 feet.

Bathiat's New Records.—Leon Bathiat's new speed record recently made on the Sommer monoplane, compared with the one held by Vedrines and made on the Deperdussin monoplane, is as follows:

Distance, Kilom.	Miles.	New Record.		Old Record.	
		Bathiat. Min. Sec.		Vedrines. Min. Sec.	
10	6.2	4	8 1-5	4	13 2-5
20	12.2	8	13 1-5	8	26 3-5
30	18.6	12	25 1-5	12	40 3-5
40	24.8	16	33 1-5	16	53
50	31.0	20	43 1-5	21	04
100	62.1	41	29 3-5	41	56 4-5

More Than Eighteen Miles High.—According to the report of the United States Weather Bureau, the world's altitude record for sounding balloons was broken by a balloon sent up by the Weather Bureau at Huron, S. D., in September, 1910. The height recorded was 18.9 miles, or about 100,000 feet. The previous height record was held by Belgium, with a height of an even 18 miles.

France and Germany Struggling for Air Supremacy

In a study of the Franco-German struggle for air supremacy, Charles C. Turner, the English aviator-author, has collected some interesting statistics and facts. By the end of March France will have 234 military aeroplanes and Germany at least 110. It is impossible to ascertain Germany's exact aerial strength as Germany is very secretive in all military affairs. The figures for dirigibles are as follows:

	France.	Germany.
Airships in Military service.....	5	6
Undergoing Trials	3	2
Building	3	1
Doubtful	4	3
Private Airships in Use.....	4	5
Private Airships Not in Use.....	2	8

In France the "Fourth Arm" consists of six companies. There are at least 250 trained military aviators, including many officers who have passed the superior aviation test in-

stituted by the French War Office. Many of the Pilots are brilliant cross-country fliers. There are, moreover, about 400 civilian aviators in France, and many of these would be available for duty in the field if required.

In Germany there are three air battalions. It would be impossible to say how many officer-pilots there are, for military aviators in Germany do not trouble to take out the ordinary flight certificate, and no list is published. There are about 140 civilian aviators.

Both in France and Germany military aviators are in constant training under practically war conditions. They make extended reconnaissance and surveys especially in the neighborhood of military strongholds and over likely fighting ground. Generals and staff officers are constantly making ascents as passengers. Following is a list of military aviation clubs formed and being formed:

France: Orleans, Bourges, Clermont-Ferrand, Toulouse, Lyons, Verdun, Epinal, Belfort, Manbeuge, Chalons, Etampes, Pau, Daul, Amberieu, Chartres, Crotoy, Montpellier, Le Vidamee, St. Cyr, Issy, Buc, Mourmelon, Tours, Douzy, Rheims.

Germany: Halberstadt, Magdeburg, Dessau, Nordhausen, Bork, Johannisthal, Doberitz, Dantzig (naval), Cologne. Besides which there are airship stations at Kiel, Tegel, Bitterfeld, Boizenburg, Stetten, Konigsburg, Baden Baden, Düsseldorf, Johannisthal and Hamburg.

The comparative expenditure for 1912 of the two countries follows:

France: \$4,400,000 for general aeronautical work, including the recent military tests, some \$200,000 for airships, and \$900,000 for maintenance, leaving \$3,250,000 for military aeroplanes; \$220,000 for naval aviation.

Germany: \$3,200,000, half for grounds and sheds and half for machines. Prince Henry Aliger an outlay of \$7,500,000.

It is certain that France and Germany will possess at least 450 aeroplanes each before the end of the present year.



1,015,924, January 30, 1912.—Jean M. Alleas, Boston, Mass. A flying machine including a supporting frame, pivoted front and rear sustaining planes at the top of said frame, pivoted bottom planes extending from opposite sides of the frame at the rear and front thereof and located beneath the top planes, said top and bottom planes and their pivotal axes being transverse of the direction of flight, a connection between the top and bottom front planes and between the top and bottom rear planes, means for independently tilting the front and rear planes, pivoted stabilizing planes extending from opposite sides of the frame beneath the front bottom planes, said stabilizing planes and their pivotal axes being transverse of the direction of flight, and means for independently tilting the stabilizing planes.

1,016,113, January 30, 1912.—Floyd F. Taylor, Gadsden, Ala. A toy airship comprising a beam, a pair of planes secured to said beam and longitudinally aligned thereon, one of said planes being adjacent to one end of said beam, and a secured plane adjacent to the first mentioned plane and relatively small in comparison therewith, a propeller disposed on the other end of said beam and rotatably connected thereto, a rudder or guiding plane disposed under the first mentioned plane and secured to said beam, said rudder being arranged to extend the whole of the transverse length of said plane, and a pin disposed in said beam adjacent to said propeller arranged for receiving the means that propel said top through the air.

1,016,020, January 30, 1912.—August R. Lassel, Washington, D. C. An aeroplane provided with a vertically arranged rudder and a horizontally arranged stabilizing plane intersecting the rudder and formed with a flexible portion, means for turning the rudder about a vertical axis to guide the aeroplane laterally, means for swinging the rudder about a horizontal axis to vary the angle of the stabilizing plane, and means for flexing the stabilizing plane for causing the aeroplane to ascend or descend.

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AVIATOR—Young man desires position with firm or as aviator assistant, with prospect of becoming aviator; sober and reliable; have some money to invest. Box 239, care Aero, St. Louis.

AVIATOR—Situation as aviator; one year's experience, can design and build. Box 174, care Aero, St. Louis.

AVIATOR—Well-known experienced Wright aviator wishes position. Box 231, care Aero, St. Louis.

AVIATOR—Wright aviator, trained by Geo. W. Beatty, open for engagement. Box 235, care Aero, St. Louis.

ENGAGEMENTS WANTED—Licensed aviator, graduate of Curtiss School, seeks engagement. Write or wire your proposition to 3649 Mettler St., Los Angeles, Cal.

INSTRUCTOR—Instructor in flying, construction of biplanes, gas engines, wants situation. Address Box 233, Aero, St. Louis.

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CATALOGUES—New company in unexploited territory would like to receive model supply agency proposition or wholesale catalogues at once. Box 236, care Aero, St. Louis.

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FOR SALE.

AEROPLANES—Bought and sold. American Aviation Company, Incorporated, 2957 North Lawndale, Chicago.

AIRCRAFT SUPPLIES—Aeroplanes for sale and built to order; propellers, models and model stock; Chicago engines; flying models. Chicago Aero Works, H. S. Renton, Prop., 164 Wabash Ave., Chicago, Ill.

BIPLANE—For sale at a sacrifice, Curtiss-Farman biplane; fine flyer, good as new; complete except motor; \$300 if taken at once. I. R. Gates, 743 Gough St., San Francisco.

MONOPLANE—Bleriot monoplane complete, less engine; cost \$400.00 to build; will accept any reasonable offer in cash or exchange. Also have Curtiss hydroaeroplane; both machines guaranteed flyers. Box 232, care Aero, St. Louis.

BLUEPRINTS—Half-size, with complete dimensions, easy to understand, of three-foot Wright model biplane, 30 cents postpaid; Bleriot, 20; 36-foot Nieuport, 20. Green Engineering Co., Dayton, Ohio.

ENGINE—Elbridge Special 60-horsepower, brand new, complete, twin radiators, \$550. Box 228, care Aero, St. Louis.

MONOPLANE—Bleriot monoplane with 50-horsepower rotary,

good as new, guaranteed first-class order, \$2,500; will sell engine only if desired, or monoplane without engine. Box 234, care Aero, St. Louis.

MONOPLANE—For sale, monoplane without power plant, complete, light and strong; splendid workmanship; write for photo. Price \$400.00. Address Box 508, Peoria, Ill.

WOODWORK—Our \$60.00 price on complete woodwork for 30-foot Curtiss-type discontinued after March 4th. The price will then be \$100.00. Take advantage. Roanoke Bi-Plane Co., Roanoke, Va.

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PATENT—For sale, U. S. patent standard biplane-type, improvements with it. Your own price. Address Otto A. Fenn, 1512 Vyse Ave., Bronx, New York City.

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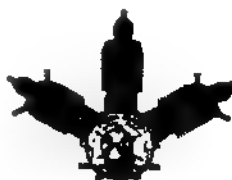
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170 POUNDS WEIGHT

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Vol. III No. 22

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General Description

Length over all.....	24 ft. 10 in.
Spread of planes.....	29 ft. 6 in.
Width of planes.....	6 ft. 8 in.
Supporting surface.....	160 sq. ft.
Seating capacity.....	1 person
Size of rudder.....	3 ft. x 2 ft. 10 in.
Size of stabilizer.....	3 ft. x 6 ft.
Size of elevators (2).....	3 ft. x 3 ft.

Control: By 8 in. diameter wheel mounted on bell on universal joint, flexing or warping planes by sidewise movement, and operating elevators by fore and backward movement. Rudder operated by foot lever.

Note.—All controls doubled wired to insure safety. Roebling special aviator wire and flexible cable used throughout.

Running Gear: Two 28 in. x 2 in. wheels, steel rims, thirty-six extra heavy spokes, single or double tube tires in front fitted in yokes with shock absorbers. Rear fuselage fitted with skid or one 20 in. wheel fitted in yoke with shock absorber, at the option of purchaser. Specially treated imported cloth.

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Same as used by U. S. Government.

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Length over all.....	31 ft.
Width of planes.....	28 ft.
Chord of planes.....	5 ft.
Seating capacity.....	2 persons
Supporting surface.....	280 sq. ft.
Weight, with engine (approx.).....	650 lbs.

Rudder: Single, operated by foot lever.
Stabilizing by four flaps, operated by shoulder yoke or by hand lever.

Elevator: Single plane, 2 ft. 8 in. x 7 ft. in front, operated in conjunction with hinged flap on one rectangular stationary plane in rear, by wheel or post, or hand lever on universal joint.

Running Gear: Regular three-wheel construction or Farman type, using two skids each mounted on two wheels fitted with rubber shock absorbers.

Planes: Covered on both sides, or single surfaced with pockets as used on world famous Farman aeroplanes. Cloth of special high-grade, of light weight, chemically treated by our own process, making it water and fire-proof.

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NEW YORK CITY

Edited by E. PERCY NOEL

OAKLAND MEET INAUGURATED BY INTERCITY FLIGHT

MAYOR ROLFE GREETES KEARNY (BEACHEY AND PARMELEE IN BACKGROUND).

SAN FRANCISCO, CAL., February 19.—So far the feature of the flying at Oakland aviation field has been an unusual interurban flight, with a landing in a real city street, which was accomplished before the meet officially began. Horace Kearny with an old-style Benoist plane with Hall-Scott motor was the combination.

Kearny made one of the most spectacular flights ever attempted in this vicinity. Leaving the aviation field in his Benoist biplane with Hall-Scott motor and flying to San Francisco, he landed at the corner of Van Ness avenue and Lombard street. There delivered a message from Mayor Mott of Oakland to Mayor Rolfe of San Francisco. Kearny covered the distance of eight miles in seven minutes, returning in six minutes.

Lincoln Beachey and Parmelee were on the street to signal Kearny down at the proper place. It was necessary for him to pass between wires stretched across the street at 300-foot intervals. On starting back it was necessary for him to climb at something like a 45-degree angle after a very short run and to dodge the cross wires. He wore life preservers of pneumatic tire inner tubes to save him from drowning in case of an unexpected landing in San Francisco bay.

Kearny made a clean getaway on his return trip, turning up a side street in the take-off and returning to the field by way of Market street, the Ferry Building and Goat Island, where he was at one time an apprentice at the United States Naval

AND WATCHES HIM FLY AWAY.

Training Station. Kearny's motor made an absolutely clean record during his flight, being in perfect tune, so much so that its perfect running was noted and commented on by many persons in the crowd.

WEDNESDAY, FEBRUARY 17.

Several accidents, one of them resulting in the serious injury of an aviator marked the opening of the Oakland aviation "meet" which took place here today. The afternoon opened with fitful and treacherous winds which taxed the skill of the aviators and whose force and danger was only too apparent as the afternoon passed.

William Hoff, the promising Curtiss graduate, who came to the front in the speed contests at the recent Los Angeles meet, slipped off the air at a height of about 30 feet. He was carried from the field unconscious and, it was thought at the time, dying, while his handsome Model D was a twisted mass of canvas and splinters, guarded from morbid souvenir hunters only by the efforts of faithful mechanicians and friends.

Hoff started in a speed event with Phil Parmelee against a heavy wind, and as he rose into the air to pass over the Wright machine took too sharp an angle and stalled his machine, losing steerage way and crashing to the ground on one wing. Hoff fell clear of the wreck but his feet were entangled in guy wires and he was thrown violently to the ground. An examination at the emergency hospital disclosed a fracture of the pelvic bone, a broken jaw bone and a slight fracture of the skull besides several minor injuries.

Shortly before Hoff's fall, Glenn Martin stalled in a heavy

wind and landing on bad ground ricocheted into a fence, completely wrecking the center section of his biplane, but not being injured himself.

Later in the day Horace Kearny came down hard while landing and sustained tail injuries which will put him out of the game until late tomorrow. Hillery Beachey also encountered an up-draft when landing and was slammed to the ground, breaking two center stanchions and his control bar. Parmelee was forced to come down at the far end of the track and damaged his chassis.

When the session closed this evening the field, to a certain extent, resembled a battle field, the various wrecks looming up in the twilight lending a rather doleful aspect.

When the session was nearly over and after every aviator had been in the air at least once, Cleve T. Shaffer, representing the Aero Club of California and the Aero Club of America, appeared on the field with a telegram from New York warning all professional aviators from participating in the meet on pain of suspension of their licenses. No attention was paid to the summons, the birdmen claiming that the meet is not an open one, but an exhibition contracted for by the Curtiss Exhibition Company and therefore not under A. C. A. rules.

Weldon B. Cooke flew the old Farman-type biplane equipped with the Hall-Scott motor. His new plane is ready, but the Roberts six which he recently ordered has not arrived and will not be here until Monday. It will be installed in time for Thursday's programme.

Farnum T. Fish carried mail from the grounds on two flights and Kearny gave a wireless demonstration with his Benoist. Hillery Beachey and Parmelee gave exhibitions, but the managers of Miss Blanche Scott refused to permit her to go out on account of the bad air. She retired from the field in a petulant mood, declaring that she would fly on the morrow, manager or no manager.

SUNDAY, FEBRUARY 18.

Beautiful weather and a large crowd which overflowed the grand stand and swept into the infield, at times impeding the movements of the machines, marked the second day of the meet. The day was an ideal one for flying and the audience was treated to an exhibition such as has never before been given in San Francisco or vicinity. Dick Ferris, in charge of the field, sent every man off on time and the events followed each other like clockwork.

Kearny was busily engaged in repairing damage until 4 o'clock when he mounted into the air and made an excellent exhibition flight. Tom Gunn, the Chinese aviator, received his Eaton biplane on the ground at 10 o'clock and at 4 p. m. sharp was off on a beautiful flight which lasted 10 minutes. Gunn's machine is equipped with a Hall-Scott motor.

Parmelee went aloft with a phospho copper wire antennae and wireless equipment and flashed messages to the signal corps station on the grounds. Martin, using Miss Scott's machine, participated in several events and gave the crowd many entertaining thrills. Hillery Beachey flew in several contests. Parmelee and Lincoln Beachey participated in a figure-eight exhibition, tilting their machines until it seemed from the ground as if a fall was certain.

Miss Scott circled the field for 10 minutes, shutting off her motor in the air and performing several difficult maneuvers. Lincoln Beachey volplaned from a height of 5,000 feet with motor shut off.

The programme closed with seven machines in the air at one time, all after altitude.

Thursday will be the third day of the meet when a special programme will be given. Friday is Ely Day, the proceeds being given the Mrs. Mabel Ely, widow of the late Eugene Ely.

At an impromptu meeting of the aviators, it was decided that Hoff should receive his contract percentage of the receipts on every day of the meet, just as if he had participated in the events.

HELMET SAVED LIEUT. KENNEDY

AUGUSTA, GA., February 24.—The first serious accident since the establishment of the Signal Corps Aviation school occurred about 5:30 p. m., February 19, when Lieut. F. M. Kennedy was making a landing. He was practicing landings for accuracy in stopping the Curtiss aeroplane at a certain point.

The wind was behind him and in descending at an angle somewhat too steep the front wheel crushed on first contact. About 100 feet farther the machine came down again and the front wheel and fork ploughed into the ground, stopping so suddenly that Lieut. Kennedy was thrown forward about 15 feet, striking the ground on his head and right shoulder. The impact of his head made a hole in the ground about six inches in depth. The leather helmets which army aviators are required to wear undoubtedly saved him from having a fractured skull. The aeroplane turned completely over, coming to rest with the top plane flat on the ground, wheels above, and rear rudder on the aviator's back.

Lieut. Kennedy is still in the City Hospital at Augusta. No bones are broken and his recovery is progressing as well as can be expected.

Aviator Adolph Richter of the Rex Smith Company arrived during the week and has permission to erect a tent hangar on the government flying field and fly here while instructing several students. His aeroplane and equipment have been delivered and students are also here.

Rain and wind permitted flying only three days during the past week. Twenty-one flights were made, having a total duration of four hours and 40 minutes. Only the Burgess-Wright aeroplane is at present in use at the Army school.

FRANCE SENDS FORMAL CHALLENGE

NEW YORK, February 24.—France has sent her challenge to America for the *Coupe Internationale d'Aviation*, the race for which will probably be held at Chicago. The Aero Club of France has entered three machines, the full number allowed under the rules. The names of the aviators are not given and they need not be until 24 hours before the race starts.

Since the beginning of the year France has been breaking world's speed records almost every week, and if it were necessary to pick the team today, France would be probably represented by Maurice Tabuteau, Jules Vedrines and Leon Bathiat. On Thursday Vedrines broke the speed record for 100 kilometers (62.1 miles) in 37 m. 58 s., and for 200 kilometers (124 miles) in 1 hr. 15 m. Vedrines, therefore, flew at a rate of 99 miles an hour. The next day Tabuteau smashed the two-hour record by covering 227 kilometers (141½ miles).

The Royal Aero Club of the United Kingdom having been assured that the Wrights had agreed not to sue for patent infringement because of the appearance of any foreign machine in the international contest, will probably send in a challenge before March 1.

FRAMING LAWS IN NEW YORK

ALBANY, N. Y., February 20.—Senator The McManus introduced a bill today providing for the registration of airships and the examination and licensing of aviators. Airships are to be registered upon application to the Secretary of State and payment of a fee of \$5, and aviators are to be licensed by the Secretary of State upon payment for examination and tests of such fee as is required by the Secretary of State not exceeding \$25, and \$2 for the license.

The Secretary of State may, after due hearing, suspend or revoke any certificate or registration or any license for any cause which he deems sufficient. Every aeronaut is declared responsible for all damages suffered in this State by any person from injuries caused by any voyage in an airship directed by him, and, if he is the agent or employee of another person making such a voyage, his principal or employer shall be responsible for the damage.

On behalf of New York aviation interests, Charles H. Otis, corporation counsel of Yonkers, will be present at the public hearing of the bill, before the senate committee on judiciary, and oppose the measure on the ground that it authorizes flying over cities, forbids flying without the sanction of the commissioners and provides for unnecessary expenditure of public money.

NEW CORPORATIONS

The Richardson Paraplane Company, of Dayton, O.; manufacturing and sale of aeroplanes; aviation school; \$50,000. Officers, William J. Richardson, V. E. Wampler, C. P. Watson, W. L. Blocher and Cawes T. Bennett.

NEW YORK GALE DAMAGES FEW AEROPLANES

GARDEN CITY, LONG ISLAND, February 24.—The 96-mile-an-hour gale that swept over Long Island on Thursday wrought considerable damage at the Mineola and Nassau Boulevard flying fields. At the former aerodrome the giant hangar of B. T. Babbitt-Hyde collapsed under the strain of the wind, and the helicopter that it housed was destroyed. Babbitt-Hyde had put nearly two years' work on his machine, which was rapidly nearing completion. Three men, who were in the shed when the crash came, were injured. Walter Stagg, the chief mechanic, had his right arm broken and his head badly cut; George Russo, an assistant, was bruised and cut, and Robert J. Allen suffered similar injuries. At the Aeronautical Society's end of the field the large portable hangar on Sidney J. Beckwith had its roof blown off and carried against the hangar of Dr. Waldron, the monoplane. Two Beckwith biplanes were wrecked.

The Nassau Boulevard aerodrome did not suffer so much by the storm. Fences were blown down and doors torn off the hangars, but no aeroplane was injured. While all this was going on on Long Island, Frank Coffyn's hydroaeroplane was being buffeted about on its float off the Battery in New York. One wing and several struts were broken on the machine.

The weather has been against flying this week on Long Island. Nevertheless, Frank E. Boland, on Tuesday, took out his tailless, rudderless biplane, at Mineola, and made a pretty flight over Nassau Boulevard. On Monday Boland covered about 12 miles at an average height of 500 feet.

There was no flying at the Nassau field. George W. Beatty, who cracked his crankcase, is waiting for a new motor from Dayton. Fred Schneider has finished another biplane, which Oliver B. Sherwood will fly down south. This biplane differs somewhat from Schneider's earlier machines. The landing gear is strongly reminiscent of the Wright aeroplane, while the inspiration for the tail evidently came from the Curtiss. The machine is headless and has Wright-type blinkers. Zadra Garcia, who is building biplanes for the government at San Domingo, has engaged Lester Weeks, of Mineola, to act as aviation instructor to the army of the West Indian island republic.

There have been rumors this week that ex-Governor Timothy L. Woodruff intends disbanding the Nassau Boulevard aerodrome this summer, but nothing definite can be learned. One story has it that if this field is closed, the Aero Club of New York will be invited to join a new organization in New Jersey. This proposed new body, it is said, has been offered a large tract of land at Bayonne, facing New York harbor, by the Standard Oil Company.

COFFYN OVERCOMES MISFORTUNES

NEW YORK, February 24.—Frank Coffyn, who has been stirring up great interest in the hydroaeroplane here, met with his first mishap on Monday. Fifteen hundred feet above the East river near the Brooklyn Navy Yard, his motor "went dead." He made a fine glide down, looped under Brooklyn Bridge, and landed safely on the water. A tug towed him home to the Battery. When Coffyn suddenly dipped for the volplane, a valuable moving picture machine, that had worked loose from his moorings on the plane, slipped overboard, fell in the river and was lost.

A worse trouble befell Coffyn early on Thursday morning. The 96-mile gale that struck New York, dashed the hydroaeroplane against the wall of the dock at Pier A, smashing one wing and several struts. Coffyn was called down to the Battery at 2 a. m. and remained, guarding his craft, for nearly 18 hours.

HYDROAEROPLANISTS WILL CONFER

NEW YORK, February 24.—Great activity has been shown this week by the Aeronautical Society, which is outlining an ambitious programme for the coming season. The technical board has called a conference of hydroaeroplaneists for March 1 to discuss rules for the regulation of hydroaeroplane sport and traffic. Among the aviators and others who have been

invited to the conference are Frank Coffyn, Walter Brookins, George W. Beatty, Harry N. Atwood and Greely S. Curtis, of Burgess Company and Curtis. Chairman Hugo C. Gibson, of the technical board, and his associates, Captain W. I. Chambers, U. S. N., and Charles de Zafra, of New York University, have been working on the hydro code of rules for nearly a year. The code has been drawn up with the co-operation of government and sporting marine experts.

Another subdivision of the technical board has called a meeting of manufacturers for the purpose of formulating some method of standardizing parts. Under the leadership of Prof. E. V. Lallier, chairman of the committee in charge, rules will be devised at this meeting for competitive tests of the various parts.

Plans are being formulated by officers of the Standard Oil Company to offer a prize of \$26,000 to the first inventor to produce a practical oil-consuming turbine motor. As a power plant of this kind would have a special utility for aircraft, a number of experts connected with the Aeronautical Society have been called in consultation devising the necessary regulations. In addition to the rich prize the Standard Oil people propose to assist the inventor in properly financing his enterprise and in marketing the motor.

On Washington's Birthday a "smoker" was held by the society, at which motion pictures of hydroaeroplane flights and balloon ascensions were shown. Frank Coffyn answered questions that were fired at him by members.

One member, who is believed to have been in earnest, asked: "What would have happened to you, Mr. Coffyn, if you had been caught in that 96-mile gale?" Mr. Coffyn promptly replied: "I should be going yet."

RUSSIAN OFFICERS WATCH ROBINSON

NEW YORK, February 24.—That the hydroaeroplanes recently sent to Europe to be demonstrated on the Mediterranean at Nice, Cannes and Monte Carlo, France, and at Sebastopol, Russia, have been received with great interest is evidenced by the following cablegram to the New York office of the Curtiss Company:

"Antibes, France, February 21.—A commission of officers named by the Russian Navy officials at St. Petersburg, to observe the first demonstration of this machine operated by the American aviator, Hugh Robinson, at this place today. Robinson made several flights of a total duration of about

START OF ONE OF ROBINSON'S FLIGHTS NEAR NICE.

an hour, in the course of which he arose from and alighted upon the Mediterranean at least half a dozen times. He also carried one of the Russian officers as a passenger in flight and glided with ease and safety on the sea. The Russians were most enthusiastic in their praises of the demonstration, which was successful in every detail.

"An official government test was made of the Curtiss motor which Robinson used in the hydroaeroplane today, and which is rated at 75-horsepower. In the official test the motor developed 86-horsepower, or a surplus of 11-horsepower above its normal rating by the manufacturers."

New Jersey Plane on Ice of Passaic River

Gary Flies New Machine.—William P. Gary recently flew his new Curtiss-type with Farman-type running gear, at Paterson, N. J., rising from the ice of the Passaic river for a number of successful flights. The machine is equipped with a 50-horsepower Harriman motor with propeller of six-foot pitch.

BULASK FLIES HYDRO ON PONTCHATRAIN

NEW ORLEANS, February 19.—Herbert Bulask, Strobel aviator, gave a successful demonstration of a Curtiss-type hydro-aeroplane yesterday afternoon, over the waters of Lake Pontchartrain, which is admirably situated for flying of this kind.

Slipping down the incline of St. John's Rowing Club at 3 p. m., the hydro rushed through the water for 200 yards in the direction of Spanish Fort, then rose gently into the air. When several miles from shore, directly opposite Spanish Fort, Bulask started back, flying roller coaster style. He made a number of dives to the water and up again without splashing his shoes and after a long exhibition cut out his motor and glided to the water. He was immediately surrounded by the flotilla of yachts and launches of the lake.

Charles J. Strobel, of Toledo, O., states that he will establish a school of hydroaeroplaning at Lake Pontchartrain, Bulask to be the instructor. The lake is only a short ride from the business center of New Orleans by trolley.

RUBEL FACTORY IS BUSY PLACE

LOUISVILLE, Ky., February 24.—Activity at the factory of R. O. Rubel, Jr., & Company certainly demonstrates the commercial value of the aeroplane industry from a manufacturer's standpoint. A representative who visited the new plant this week was more than surprised to find 12 aeroplanes under construction, 10 of which are being built on contracts that were placed during the past three weeks. There were at least 25 to 30 propeller blades being made up.

The following people have placed orders for complete aeroplanes during the past few weeks: W. J. Richardson, Dayton, Ohio, two-passenger biplane; W. O. Huff and J. G. Maris, Columbus, Ohio, two-passenger biplane driven by two propellers; S. G. Combs, New Martinsville, W. Va., one-passenger biplane; Charles Wickliffe, a well-known Louisville attorney, original type monoplane; Walter Ralston, Holton, Kan., biplane and Bleriot-type monoplane; R. W. Ross and C. B. Prodder, Mandan, N. Dak., two biplanes and two Bleriot-type monoplanes.

PREPARING FOR HOT SPRINGS MEET

HOT SPRINGS, ARK., February 26.—Jimmie Ward will be one of the chief attractions at a percentage meet to be held at the race track here, March 12, 13 and 14. Two thousand dollars is being spent to advertise the affair and an attendance of 25,000 is expected. Entries from about five aviators will be accepted on a percentage basis. S. W. Quinn is in charge of the arrangements.

Notes of San Francisco and Vicinity

Ivan C. Gates has bought out the former backers of Didier Masson and together with that aviator is organizing a comprehensive summer campaign of exhibition flying in California and Canada. They are building a large military biplane at the shops of the San Rafael Aviation School and Masson expects to be in the air again within the next 10 days.

S. L. Boukard, Vring Brothers and Louis Gandy are at work on a passenger-carrying monoplane which they expect to try out on Sunset field soon. It will be equipped with a 1912 50-horsepower Maximotor.

Charles H. Paterson, John Eames, Jr., and Ed Blakesley made flights at Sunset field, February 18, one of them, that of Blakesley, being notable. Although Blakesley has been an aeroplane builder for the greater part of the past two years he has never been in a machine, and when invited to try his hand on in Paterson's Curtiss four, he made a thorough examination first and taking charge of the control made a clean flight across the field, a distance of a mile at an altitude of 50 feet.

Paterson made his second flight at Sunset, February 18, doing a complete circle of the field over the 2½-mile course. John Eames flew once across the aerodrome at a height of six feet.

Julius Judice, an emissary of the Salvador Government, has enrolled as a pupil at Sunset and will learn to fly before returning to his own country. He is having parts for a Curtiss-type biplane made at the Paterson shop and on his return home will take charge of an aeroplane school which his government is about to establish.

Frank Bryant, Curtiss biplane, and Roy Francis in a Gage biplane with Hall-Scott power plant, gave exhibitions at Bakersfield, Ga., February 17 and 18, then left for Arizona, where they are billed to fill a number of engagements.

Weldon B. Cooke was the guest of honor at a banquet tendered by the Pacific Aero Club in the rooms of the San Francisco Press Club on Friday evening, February 16. The event was in recognition of Cooke's performance in circling Mount Tamalpais, recently, and the winning of the endurance record at Los Angeles.

F. F. Parker is assembling a home-made Farman-type biplane which he built himself, with the aid of Paterson, who furnished the ribs and some of the other woodwork.

NEW STITES PLANE FLIES WELL

LOS ANGELES, CAL., February 19.—Frank Stites tried out his new Stites biplane at Griffith Aviation field this evening, making a 10-mile flight. The plane is equipped with a 60-horsepower Hall-Scott power plant. Stites is under contract to fly in an exhibition at San Bernardino on the coming Saturday and Sunday.

CORRESPONDENCE

[1060] W. D. H., Kenwood, N. Y.—The average price paid for a passenger flight is \$25. Gliders cost from \$25 to \$100, depending on the size. They can be made for about one-third of this if the builder can do all the work himself.

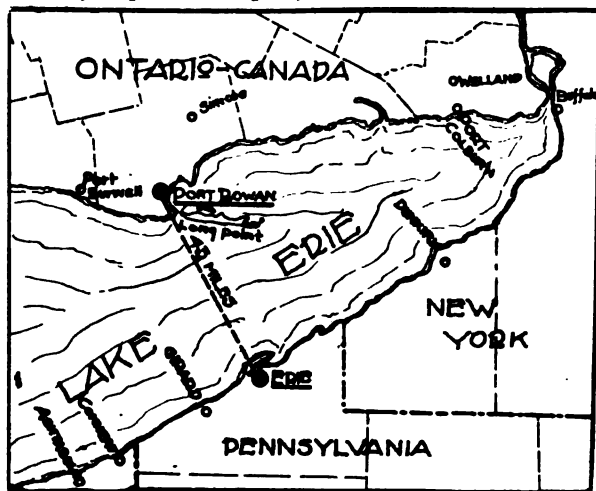
[1061] I. McG., West Alhambra, Cal.—The area of the main planes of the Santos Dumont monoplane is 113 square feet. If you have proper instruction, there is not much difference in the time and skill necessary to build either a monoplane or biplane. The Nieuport monoplane flies with the least power of any practical aeroplane. Flights having been made with a 20-horsepower motor.

[1062] H. S., Cambridge City, Ind.—Complete records of all aviators killed in aeroplanes since the beginning of flight up to April 1 will be given in our special Achievement Number, which is published on April 6.

[1063] W. A. M., Indianapolis, Ind.—If you alter the sizes of the Demoiselle monoplane you will not have a Demoiselle. The Demoiselle is very hard to control, owing to its very high speed and small size. There are many later designs that are just as easy to build and much easier to fly.

FLIES ACROSS LAKE ERIE TO CANADA

ERIE, PA., February 20.—Earl Sandt, a youthful aviator, who today flew from Erie to Port Rowan, Canada, the first aviator to fly over the Great Lakes, came to grief 10 miles out on the lake from North East, Pa., tonight, while attempting a return flight to the American shore. While high in the air and 20 miles east of his course, the engine of his biplane stopped. For a time he glided toward the ice-covered lake, but he made a bad landing and was buried, unconscious, in the wreckage. How long he remained in this condition Sandt does not know. When he recovered he was bloody from many cuts. Aided by a pocket compass, Sandt walked 10 miles to the



SANDT'S ROUTE FROM ERIE TO PORT ROWAN.

American shore, landing at North East at 10 o'clock tonight. He was found staggering along the shore by boys who were skating, and later carried to a hotel, and word telephoned to this city. He is not injured seriously.

Speaking of his trip, Sandt said:

"I made the trip over in fine shape and started back from the Canadian shore at 5:30 o'clock. I got along fine for about 15 minutes and then my engine began to miss. A minute later it stopped. I was 2,000 feet in the air at that time and started to glide toward the ice below. I remember striking the ice, and from that time everything was a blank. When I came to I was in the wreckage and found the machine was hopelessly broken. I had my pocket compass and with it started toward the shore. I walked for about three hours before I saw lights. I thought at first that it was Erie, but in a minute I realized that it was not, and that I was lost. I was so weak I could not move another foot. Then I cried for help. It was my last effort. I could hardly speak, and I guess if those boys had not heard me I might have died."

The trip from Erie to Port Rowan was made in 34 minutes. In coming to the ground Sandt broke a rib of his Curtiss biplane, but the damage was not serious. Shortly before 6 o'clock a telephone message from the Canadian shore announced that Sandt had departed for the American shore at 5:50. When more than an hour passed and the aviator failed to appear, the crowd which had assembled became uneasy. Relatives and friends of Sandt communicated with the Canadian side and verified the report that he had started the return flight.

RAISING FUNDS IN FRANCE

PARIS, February 12.—France evolved a new watchword this week, "Our future is in the air," as a reply to the kaiser's famous dictum in regard to Germany's destiny.

The first year of French aviation had more than a tentative history and was marked by flying meetings, the second year was marked by town-to-town and capital-to-capital competitive flights.

This year began as if it would not see any special feature in the new science, but in the last few days it would seem as if Frenchmen have decided this year will witness a national effort to win France's incontestible superiority of the air.

Each high school in Paris is raising a fund to buy an army aeroplane, towns are voting from 1,000 to 25,000 francs, and the athletic association which controls all amateur sports is

arranging that the gate money will be given for aeroplanes. The Paris theater chatelet is also in the movement and its employees take up a collection after each performance.

The mayor of a village of 900 inhabitants has collected 200 francs. Banks propose to endow the Army with aeroplanes, which will be named "Finance No. 1," "Finance No. 2," etc., as the subscription grows.

Special industries, like the lace workers, the ribbon workers and others, are collecting funds for aeroplanes, which will bear the name of the individual industry which provides them. Thus it seems as if all France has gone practically unanimous for the conquest of the air.

CLUB WILL AID BOSTON MEET

BOSTON, February 24.—The board of directors of the Aero Club of New England met early this week and tendered the co-operation and aid of the club to the third annual Boston Aero Meet, to be held at the Harvard Aviation field at Squantum from June 29 to July 7, inclusive. Manager William A. P. Willard appeared before the directors and outlined the plans of the meet. It is probable that it will be held under the auspices, in part at least, of the Aero Club.

The headquarters of the management of the meet is to be established next week in offices at 209 Washington street, in the heart of the business district. A large oil painting of the field's new layout will be conspicuous in the offices, while a large banner will fly from the windows bearing the announcement of the meet.

Willard is in communication with aviators on both sides of the Atlantic, but refuses to make any statements as to foreign competitors until he is informed as to the probable competitors in the Gordon Bennett race. He signed a contract today with George A. Gray of this city, a graduate of the Wright school, who expects to fly a Wright machine.

FRONTIER MOTOR NEXT TO BE TESTED

NEW YORK, February 24.—The Frontier aero motor, which has been entered for the \$1,000 prize competition of the Automobile Club of America, will be tested next week. This motor, made by the Frontier Iron Works, of Buffalo, N. Y., is a four-cycle, eight-cylinder, V-type water-cooled motor, the bore and stroke of which are given as $4\frac{1}{2} \times 4\frac{1}{2}$ inches. The makers state that this motor will develop a little more than 54 horsepower when running at a speed of 1,000 revolutions per minute.

The Willard motor has been withdrawn from the competition.



1,016,180, January 30, 1912.—Otto Seydel, New York, N. Y. A kite comprising a backbone, upper and lower cross arms mounted to swing on the said backbone, upper and lower fabric coverings secured at their upper edges on the said cross arms and also secured to the backbone, the lower edge of the upper fabric covering being spaced from the lower cross arms, connections between the lower corners of the upper fabric covering and the lower cross arms, and a cord connected with the free ends of the cross arms and adapted to be removably fastened to the end of the backbone, the lower fabric covering having its side edges converging and attached to the said cord.

1,016,240, January 30, 1912.—Valerian Alexieff, Ensell, Persia. An apparatus for steering movable objects more particularly ships and flying machines comprising a rudder, an electromotor for actuating said rudder, a geographical chart, a conducting wire located over said chart, representing the course of the object, electrical contacts capable of moving over said chart in accordance with the movements of the object and adapted to co-operate with said conductor, said contacts being adapted in co-operation with said conductor to transmit electric current in one or the other direction through said electromotor and actuate the rudder.

COLUMBIA HAS NEW METHOD OF LATERAL CONTROL

The Columbia biplane with which aviator Paul Peck recently made a 90-mile cross-country trip, starting from College Park, Md., is particularly interesting on account of the use of a new method of lateral control. The main planes, which have a span of 30 feet and a chord of 5 feet 9 inches, are so constructed that the last two feet of the trailing edge is flexible. This flexibility permits the camber to vary from two to three inches.

The planes have no ailerons in the ordinary sense of the word, the lateral balance being obtained by interconnecting the outermost four feet of the flexible trailing edges of the main planes so as to allow a movement of four inches in both directions. In practice this movement has been found ample to give complete control.

The tail plane is also flexible and has about 27 feet of surface. The rudder is of the hinged and balanced type, with about seven feet of surface. The landing gear consists of flexible skids to which are attached two Pennsylvania 20 by 4 inch wheels, mounted on solid steel axles, fitted with the usual rubber spring shock absorbers.

The power plant consists of a 50-horsepower Gyro motor direct-connected to an 8-foot diameter by 5.20-foot pitch Simmons propeller. The motor turns this propeller at 1,200 revolutions per minute on the ground, and shows a standing thrust of 440 pounds. The speed of the machine is said to be from 60 to 65 miles per hour. The tanks have a capacity sufficient for five hours' continuous flight.

The pilot is protected from the elements by a somewhat stream line form of body which materially decreases the head-resistance while adding greatly to the comfort of the aviator. The control is somewhat different from the ordinary, the control wheel being mounted on a stem arranged so that a fore-and-aft movement operates the elevator. Rotating the wheel governs the lateral balance and twisting

the wheel, like the handle bars of a bicycle, operates the rudder. The weight of the complete machine without pilot or supplies is about 600 pounds.

The Columbia biplane is made by The Washington Aeroplane Company.



L. BEACHEY DESCRIBES HOFF ACCIDENT

SAN FRANCISCO, Cal., February 23 (Telegram).—William H. Hoff, the Curtiss aviator, was seriously hurt the first day of the Oakland meet at Emeryville, when flying close to the ground, but it is believed that he will recover and fly at the Boston meet in June. In explanation of the accident, Lincoln Beachey gave the following signed statement to an AERO correspondent today:

"Hoff's accident was caused by a gust of wind striking him from the side while his biplane was stalled on account of trying to climb too fast. Not having sufficient headway, he was unable to control the machine and, being but a short distance from the ground, he had no opportunity to right himself when the gust hit him. His engine did not stop until he hit the ground.

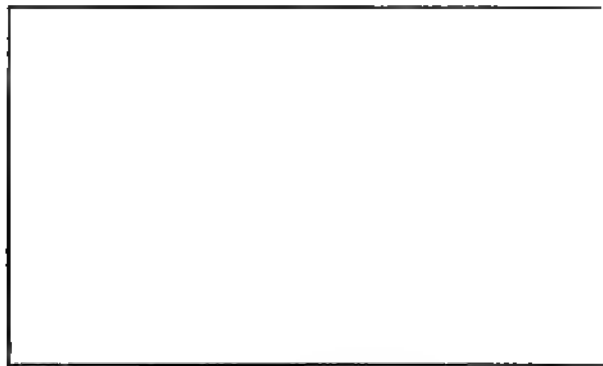
"Published reports that Hoff went into the air under protest are erroneous. He was fretting all afternoon because he was not ready so he could go up. The accident was one of those unavoidable ones that are liable to occur to the best men at any time."

TOM GUNN INJURED BY COLLISION

SAN FRANCISCO, Cal., February 23 (Telegram).—Tom Gunn, the Chinese aviator, was severely injured today at the Oakland meet. Endeavoring to rectify engine trouble while in the air, he collided with a pump house. The side of the building was broken in by the impact and the biplane wrecked. Gunn is now in the hospital with his jaw and a leg fractured. He anticipates a speedy recovery and is already making plans for his new plane. He had made only 11 flights previous to the accident.

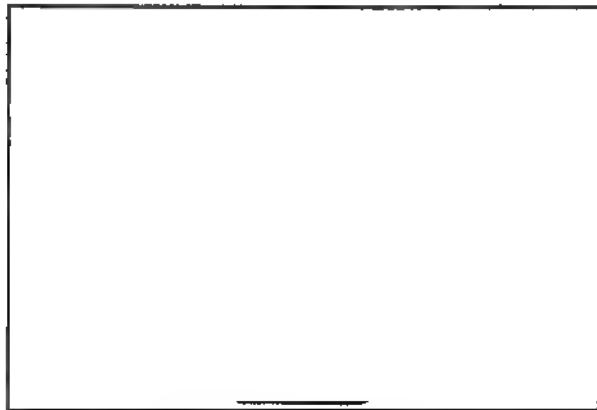
THE 1912 RENAULT MOTORS DESCRIBED

The Renault motor which has made a place for itself in the history of aviation by its consistent performances in France, and which is soon to be seen in a United States Army plane, possesses a number of features not usually found in an aviation motor. The first thing that impresses one after realizing that it is an air-cooled motor, is the size of what would be called the camshaft in the average motor of this type.



90-H. P. TWELVE-CYLINDER RENAULT.

The camshaft in all of the Renault motors is made to do double service. It actuates the valves for both the inlet and the exhaust, but it is made of sufficient size to act as the propeller shaft as well. This construction permits high engine speed with moderate propeller speed, as the camshaft turns at half the engine speed. The normal speed of the different sizes is 1,800 revolutions per minute, with a propeller speed of 900 revolutions per minute.



35-H. P. EIGHT-CYLINDER RENAULT.

The cylinders form a V of 90 degrees in the four- and eight-cylinder designs while the 12-cylinder type has a "V" of only 60 degrees. The valves are contained in pockets, the exhaust being operated by an overhead tappet gear. In the larger sizes the engine is completely covered by a kind of hood or bonnet, at the rear of which is a large blower, maintaining a forced draught between and around the cylinders, the space above and between them being entirely covered in. The cylinders are provided with flanges similar to the ordinary air-cooled type.

In the 25-horsepower four-cylinder and the 35-horsepower eight-cylinder types it has not been necessary to provide the hood over the cylinders, because on account of their sizes they radiate the heat rapidly. Oiling is by forced feed by pump, the base of the engine being used as a reservoir. The oil circulated is used over and over makes for a very small consumption. The carbureter is automatic, provision being made to use a hot air intake when conditions require it. Another valuable feature is the use of steel tubes passing completely through the aluminum crankcase, and projecting on either side so that they can be used for engine supports and provide for attachment to the body of the aeroplane.

Another advantage of the camshaft drive for the propeller is the elimination of the gyroscopic effect of the engine shaft and other revolving parts owing to the counter effect of the

70-H. P. EIGHT-CYLINDER RENAULT.

propeller which turns in an opposite direction to the engine shaft.

The Renault motor is made in the following sizes: 25-horsepower, four cylinder, 3 9-16 inches bore by 4 3/4 inches stroke, weight 140 pounds. Thirty-five-horsepower, eight-cylinders, 2 3/4 inches bore by 4 3/4 inches stroke, weight 240 pounds. Fifty-horsepower, eight cylinders, 3 9-16 inches bore by 4 3/4 inches stroke, weight 380 pounds. Seventy-horsepower, eight-cylinders, 3 3/4 inches bore by 4 3/4 inches stroke, weight 400 pounds. Ninety-horsepower, 12-cylinders, 3 9-16 inches bore by 5 1/2 inches stroke, weight 640 pounds.

Ignition is by high tension magneto, two magnetos being used in the 90-horsepower size.

The Paul Lecroix Automobile Company, of New York, is the exclusive American agent of the Renault motors.

\$7,500 FOR BALLOON RACE

New York, February 24.—Dispatches from Berlin state that 26 German aeronauts have volunteered their services for the purpose of defending the Coupe Internationale des Aero-nautes, won at Kansas City last October by Lieut. Hans Gericke. Elimination trials will be held April 28 at Dresden and Leipzig simultaneously. The winners of these events will be pitted against each other in a final elimination contest at Breslau, where two associates for Lieut. Gericke, on the defending team, will be selected for this year's race from Stuttgart, October 27.

It is announced here that besides the trophy, prizes have been offered amounting to \$7,500, about double the sum put up last year.

E. PERCY NOEL, Founder-Editor

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The Editor is pleased to consider MS and photographs for publication, but only material that is likely to prove of interest to the readers of Aero. The Editor cannot undertake to answer technical inquiries except in the columns of Aero.

A SUGGESTION TO AERO CLUBS

While other nations are forging ahead in the equipment of their armies with the fourth arm, the United States lags behind. Perhaps the reason is not so much that Washington fails to see the need or advantage of a much stronger aero division, but rather because there is a dearth of commissioned officers. This situation is difficult to cope with.

The military system of the nations that are rapidly increasing the number of army aeroplanes and dirigibles is, as everyone knows, far different from that of the United States. In these foreign countries practically every able-bodied man wears the uniform of his

country for at least one year of his life and usually longer.

But this does not conclude the matter. Patriotism, combined with discernment, makes these foreign people, who generally are much more economical than Americans, open their purses to increase the national fund for aerial equipment. By following this practice and utilizing the officers and men of the National Guard, the United States can soon have an aero division in reserve that will put us on a par with other nations.

The appointment of Lieut. Benj. F. D. Foulois, one of the first military aviators, to promote such activity in the militia of the various states, is the first step of the Army in a new and promising direction. It now remains for the commanders of state militia to organize aero divisions that shall be something more than nominal.

A federal appropriation for the purchase of aeroplanes for the National Guard is not a remote possibility. It is, as a matter of fact, more than probable that such an appropriation will be made eventually. But now is a better time to begin to get them.

It should not be a difficult matter for the majority of the states in the Union each to raise \$10,000 by popular subscription. This amount would furnish the militia with two aeroplanes and equipment and include the instruction of two aviators.

The aero clubs throughout the country, particularly those having flying fields, would cooperate. They might well devote themselves to raising the funds. Certainly they would be glad to offer hangars free for the first year and the use of the flying fields.

That there would be many applications from officers and men of the militia to be assigned to the aero division, and some rivalry for the first opportunity to learn to fly, there is no doubt; but this is a matter that could be settled according to rank, time of enlistment, drill attendance and other qualifying points.

Probably there are fully 25 of the states that are quite capable to carry out such a program. If they begin at once, the United States may have a reserve fleet of 50 aeroplanes, with 100 capable aviators, by the middle of summer.

One of the results of such a movement would be more graduates from West Point, more appointments from civil life, to fill the first and second lieutenantships of the regular army; for it would quicken interest in aviation, and make army service more desirable.

Certainly this is an opportunity for aero clubs which truly wish to accomplish something this year. Let them join hands with the commanders of the state militias, publish the opportunity throughout the states, raise the money and buy the aeroplanes.

Among the Aviators

Miss Harriet Quimby, late of the Moisant forces, will sail for Europe shortly, to enter flying contests against notable European air-women. She hopes to bring back a speedy monoplane to use at the Chicago meet next summer.

Albert Fileux, who was the passenger when Moisant flew from Paris to London, and who has recently been flying a Morane monoplane in Canada, is now in New York.

"Cap" Baldwin is helping to make history in the new Chinese republic. A cablegram from Shanghai states that he and Lee Hammond are building "Red Devils" for the new government in China. In Japan they finished a \$150,000 contract with a Nippon corporation. From China the two Long Islanders will go to Manila and Australia.

Lieut. Frank S. Lahm, according to information received from Lieut.-Colonel W. A. Glassford, chief of the U. S. Signal Corps in Manila, will use a Wright biplane in the Philippines. Lieut. Lahm, who is already on the ground, will pilot.

Lieut. Benjamin D. Foulols, detailed as instructor of militia in aviation, will begin giving lessons to the First Company Signal Corps, National Guard of New York State, at an early date.

George W. Dyott, the Deperdussin pilot, has returned to New York from Mexico. Although Dyott took President Madero for a trip, he was jailed like Charles K. Hamilton, apparently for not breaking his neck for the benefit of the natives.

H. D. W. Reichert, of Philadelphia, will be in charge of the Moisant aviation school, which will shortly reopen at Hempstead, Long Island.

L. W. Bonney contracted with the Pathe Motion Picture Company to fly at St. Petersburg, Fla., on Washington's birthday. Bonney has fully recovered from the injuries he received at Tampa last November.

Second Lieut. Frank M. Kennedy was caught under the wing of an Army Curtiss in a bad landing at the Augusta, Ga., school, February 19. Two ribs were broken, but otherwise Lieut. Kennedy was unhurt. He qualified for his pilot's license February 9.

O. E. Williams, of Scranton, Pa., has recently been carrying passengers, starting from the frozen lake there. He uses a Curtiss biplane with eight-cylinder 60-horsepower Curtiss motor. Williams is superintendent of a Lackawanna power plant, in Keyser valley.

Harold Kantner, with his Moisant, flew in exhibitions at Tampa, Fla., February 16. He was joined on February 19 by Max Lillie with his Wright.

Otto W. Brodie, chief instructor at the Aero Exhibition Company's school at St. Augustine, flew from North beach to Pablo beach and return on February 16, using his Gnome-motored Farman.

Cal P. Rodgers is in Los Angeles, Cal., eagerly awaiting an opportunity to see some of the kind of service that his father and grandfather famous. He has his Wright model B and his model EX ready for use and hopes that he may have a chance to use them for the Army along the Texas frontier soon.

Hillery Beachey has reported to his manager, M. A. Heilmann, in St. Louis, that up until February 19 he earned \$10,047 on the Pacific coast.

Charles Zornes has taken Ralph McDonald, of Walla Walla, Wash., as pupil in his school of aviation at Pasco, Wash.

Beckwith Havens, instructor at the Curtiss Miami school, carried Miss Beryl Curtis, a prominent Brooklyn (N. Y.) debutante, as passenger recently.

George Mestach and Ernest Mathias have gone to New Orleans to supervise the unloading of two Borel-Morane monoplanes which they will fly at the Montgomery (Ala.) Meet, the week of March 4.

Barney P. Moran, of Birmingham, Ala., has learned to fly a Curtiss hydroaeroplane at Miami. C. C. Witmer was his instructor.

Nels J. Nelson, the Mills aviator, flew over part of the residence district of New Britain, Conn., February 18. He used his biplane equipped with six-cylinder Kirkham motor.

FROM THE COMPASS POINTS

Would Handle Aero Supplies.—The New York and Brooklyn Automobile Supply Company, a pioneer in the automobile business, is about to enter into the aeronautic business and would like to represent manufacturers of complete machines and supplies. F. Brauninger is the manager.

Aeroplane Shipped to Shanghai.—An aeroplane, consigned to J. Cochman, Shanghai, China, was shipped from San Francisco, Cal., February 13. The name of the shipper was kept secret.

Will See First Flights.—Despite the fact that a number of aviators have been born and bred there and nearby, Oroville, Cal., will have its first exhibition, March 3, when A. L. Smith will fly over the city.

Ann Arbor Gets Motor.—The Detroit Aeroplane Company has presented the University of Michigan, at Ann Arbor, with one of its two-cylinder opposed motors, which will be tried out in the mechanical engineering laboratory.

Army Planes For Ft. Leavenworth.—Construction was commenced February 20 of two aeroplane hangars at Ft. Leavenworth, Kan., where two of the army machines will be housed about June 1. Major Edgar Russell, commander of the signal school there, will have charge of the aviation work. This will consist chiefly of schooling, air scouting and map making.

Individual Builders Active.—A number of individual builders are entering the field. Willis Wood and Ralph L. Bray, of Long Branch, N. J., have completed their second Curtiss-type. The new machine, of the headless type, has made several short flights. Albert Forseth, of Grand Fork, N. D., is remodeling the Kenworthy-McGoey biplane of last year. E. P. Miller, of Brockton, Mass., is preparing to give an exhibition at his home city, in his newly-made biplane. Louis Schiff, Jr., of Millstadt, Ill., has built a monoplane, which he has not yet been able to fly. James Knupp, of Dayton, O., is building a motor for his machine. Frank Redlinger, of Erie, Mich., has designed a following-type monoplane, which he believes will have automatic stability.

Lectures at Memphis.—Montraville M. Wood lectured at the Goodwyn Institute, Memphis, Tenn., February 15, on "Aviation to Date," illustrating his talk with many stereopticon views. The audience was large and appreciative.

New Monoplane Company.—The recently chartered Johnstown, (Pa.) Monoplane Company, expects to produce its first machine about March 20. It is said that a 100-horsepower Gnome motor has been ordered. The incorporators of the new concern are A. L. Gettys, A. E. Hiteshew, C. E. Dovey, H. E. Slick and Carl Heinz.

University Contracts for Flights.—The Aero Club of the University of Virginia has contracted with the Curtiss Exhibition Company for flights at Lambeth field the latter part of April. The club was founded in 1910 and has many enthusiastic members.

Ohio Militia Interested.—Since the conference of Lieut. B. F. Foulols with Mayor L. W. Jaquith, at Salem, O., February 15, the Ohio National Guard is hopeful of soon having an aeroplane of its own. An aviation section of the signal corps will be formed immediately.

To Fly at Birmingham.—Among those who will take part in the flying at Birmingham, Ala., the week of March 25, are: Oscar Brindley, George Mestach, Ernest Mathias, and Paul Peck. Automobile and motorcycle races will be held as well. The affair is being managed by J. S. Berger.

Dayton Exhibition in May.—The master bakers of Ohio are arranging for exhibition flights at Simm's Station, near Dayton, May 21.

FOREIGN NOTES

Temporary Office:
318 North 8th St.
St. Louis.

E. Percy Noel,
Secretary.

BOARD OF GOVERNORS

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BULLETIN

1912 Dues Payable

Notices of 1912 dues being payable have been sent to all members and the response from the majority has been very prompt. Members greatly facilitate the work of the board of governors by sending their checks to the treasurer promptly.

Technical Committee Meets

The largest gathering of members that has yet been seen in the club room was on hand Saturday night at the open meeting of the technical committee. James W. Bemis, acting president, and W. A. Simpson, vice-president, representing the board of governors, were present and heard the plans of the committee for the immediate future. The committee was asked to present a recommendation to the board along the lines of suggestions offered by E. R. Armstrong, member, and seconded by Tom W. Benoist, chairman of the committee.

1912 Membership Cards Out

The club membership badges for 1912 were sent to members in good standing this week. The card is blue with the following form of agreement printed on the reverse side:

"This card is not transferrable and will be taken up if used by other than the member to whom it is issued. It entitles the holder to free admission to Kinloch, the club flying field, when no special events are being held, and to all events conducted by the Aero Club of St. Louis. It must bear the holder's signature to be valid.

To Members Going Abroad

Any members contemplating tours in Europe this year will find themselves well received by any of the foreign clubs affiliated with the International Aeronautic Federation, upon showing their membership cards. If members going abroad will notify the secretary, stating in what countries they propose to travel, special advices of their coming will be sent to the clubs in cities that are to be visited, which will make introduction simpler.

The club will also undertake to arrange for balloon ascensions, dirigible voyages, or aeroplane rides at any of the foreign aviation centers, for any members making their requirements known sufficiently far in advance of their departure from St. Louis.

Meeting for Junior Enthusiasts

Members and members' sons are invited to be present at the meeting for the organization of a junior aero club in St. Louis for the promotion of gliding, kite and model flying, which will be held in the club room, Thursday evening, February 29. This club, when organized, will be affiliated with the Aviation Association of America. Already about 30 young men have signified their intention to be present. E. R. Armstrong, of the technical committee, has agreed to give a brief talk on the "Object and Utility of Model and Glider Work."

Readers of AERO visiting the French capital will be welcome at the Paris bureau of AERO, 14 Avenue Bois de Boulogne, where Charles Roditi, French representative, will be found. M. Roditi will be pleased to direct visitors to the points of aero interest and to be of any assistance possible.

Wrights Lose Suit in Germany.—According to cable reports from Berlin, the German patent office invalidated the basic feature of the German Wright patents in regard to the simultaneous action of the rudder and wing flexing. The suit, which has been in progress for a long time, was brought by five German firms. The court upheld two specific forms of patent combining the steering and flexing, but disallowed the general claim. The judgment is open to appeal before the Imperial Supreme Court at Leipzig.

World's Distance Record Again Broken.—At Pau, February 23, Maurice Tabuteau mounted on a Morane-Saulnier monoplane, broke the world's record for distance in two hours, by covering a distance of 227 kilometers 454 meters (141.25 miles). The previous record, also held by Tabuteau, was made recently when he covered 205 kilometers 287 meters (127.58 miles) in two hours.

Propeller Break Fatal.—At Pau on February 23, Lieut. Ducourneau was killed by a fall from a height of about 450 feet when the propeller on his monoplane broke, one blade, while traveling at a high rate of speed.

Vedrine Regains Speed Record.—According to cable reports, Jules Vedrine flying his new 140-horsepower Gnome-Deperdussin racer at the Pau aerodrome, February 22, broke the world's speed record recently made by Leon Bathiat, by flying 100 kilometers (62.1 miles) in 37 minutes and 58 seconds and 200 kilometers (124.3 miles) in one hour and 15 minutes. The average speed for the entire distance was 99.1 miles per hour, the last 100 kilometers being made at the slightly greater speed of 101.1 miles per hour.

\$5,000,000 for Aviation.—The French Senate recently adopted the aviation program which called for the expenditure of \$5,000,000 yearly.

Six on a Sanchez-Beda.—On a Sanchez-Beda biplane fitted with an 80-horsepower Canton-Unne motor, Collex made a trial flight on February 7 with five persons beside himself, a load of about 880 pounds.

Taking Home His Mount.—Having bought a new Bleriot-Gnome and taken delivery on it at Etampes, Lieut. Marlin set out on February 6 to fly back to Rheims where he is stationed. Although it was raining, he made a start at 8:45 a. m. and one hour 35 minutes later arrived safely at the end of his 100-mile journey.

Two Deaths in Russia.—Two pupils at the flying school at Sebastopol met their death on February 8. They were flying on a biplane, when it fell to the earth, and, the wreckage catching fire, the aviators were burned to death before assistance could reach them.

Aeroplanes in Real Postal Service.—A regular postal service by aeroplane has been established in Germany between the towns of Cologne, Dusseldorf and Neuss. Four aviators are employed on the route.

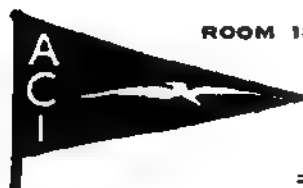
Town Pays For Aerodrome.—The town council of Douai has voted a sum of forty thousand francs (\$8,000), to contribute to the installation of a military aerodrome in that town.

Gallaudet Files Nieuport Now.—Edson Gallaudet, formerly a Wright pilot in the states, has won his brevet at the Nieuport school. There are several other Americans learning there, amongst them Miss Lottie Brandon. An American by name of Mac Grath has arrived at the Bleriot school at Pau to learn to drive a Bleriot.

Aviators Honored.—Georges Legagneux, the well known French pilot who during the *Circuit de l'Est* and the French maneuvers flew over the German frontier, has received Cross of Legion of Honor, as well as Aubrun and Renaux for services rendered to the French army.

Lieut. Scott in Paris.—Lieut. Scott, formerly of the United States Navy, is in Paris. He has fitted his bomb dropping machine to Gaubert's Wright. Some rather successful tests were held with this machine at Villacoublay.

THE AERO CLUB OF ILLINOIS



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Varsity Men Prove Keen in Tire-Making

The development of the finer details of the automobile tire business was never more forcibly exemplified than in the statement of W. D. Shilts, manager of salesmen for the Goodyear Tire and Rubber Company, who says that many of the largest and best universities in the country are represented on the Goodyear staff of experts.

"It used to be," says Shilts, "that the business of creating a rubber product was considered purely a workman's job, but the technical side of the business has developed wonderfully in the last few years.

"Rubber and tire manufacturers are reaching out in every direction for experts—for trained men. For example, the Goodyear Tire and Rubber Company has in its employ, in the experimental and other departments of production, not less than 17 alumni of Massachusetts Institute of Technology, to say nothing of the alumni of other first-class colleges who are Goodyear men.

"Among the colleges represented on our payroll I might mention Yale, Harvard, Pennsylvania, Michigan, Cornell, Princeton, Reserve, Bowdoin, Williams, Bethany, Case, Butcher, Wooster, Mount Union and Colgate.

"Tire manufacturers, judging from the experience of the Goodyear Company, have realized that there is a difference between modern and old-time business methods, and they are equipped accordingly. University men have had a great deal to do with bringing the tire business to its present state of advancement and perfection. Goodyear university men could quickly form a football team that would include names very well known on the gridiron. And their achievements in the laboratory are not less noteworthy.

"You may remember that some time ago the president of the Massachusetts Institute of Technology made a tour of the country and visited a number of the larger cities, where he was banquetted by alumni of Massachusetts Tech. One of the most notable banquets of the tour was given, not in a metropolis, but in Akron, Ohio, a city of 70,000 people, in which the rubber tire industry has taken over a large number of the live wires that the Massachusetts Institute of Technology had been turning out. With the Goodyear Company, at least, tire-making is not guesswork, but has been reduced by experts of the highest grade to an exact science."

Echoes of the Paris Aero Show

This interesting three-seater tractor biplane, which made its appearance in the French aviation arena just prior to the military trials at Rheims, gives an impression of immense strength, solidity, and power when compared with those light speed craft which formed such a great percentage of the exhibits. Its fuselage, which is divided and made detachable, for convenience of transport, at a point to the rear of the pilot's seat, is triangular in section. It is built throughout in ash, with the exception of the forward portion, which is cross-strutted with drilled-out steel struts of double angle section, so provided to strengthen the body to with-

stand the extra strains imposed upon it by the motor—a 100-horsepower six-cylinder Chenu. This latter drives an eight-foot Astra tractor screw through reducing gearing. Radiators for the cooling of the motor are disposed on each side of the body in the neighborhood of the middle seat.

The main planes, double surfaced, are built up cellular fashion and are so constructed that they may be detached, leaving a center section about seven feet in width in order that the machine may be easily transported along the road. Warping is employed for the correction of lateral balance, this being carried out on the Wright system, under which license Astra machines are made.

The landing gear is somewhat reminiscent of Antoinette practice, and has the triple advantage of being simple, strong and presenting little head resistance. Landing shocks are taken by a large diameter Oleo pneumatic spring that forms the centre unit of the chassis. In common with many other types of landing gear, no provision has been made to relieve any strains resulting from a sideways movement of the machine on landing, and the fact that so many designers are apparently ignoring this detail, which has hitherto been deemed a most important one, seems to demonstrate that the constructional difficulties of obtaining this accommodation for sideways strains altogether outbalances any advantages that might accrue from its adoption.

Command is maintained over the controlling surfaces from duplicated controls arranged for the use of the occupants of the two rear seats. The duty of the occupant of the forward seat is to act as observer and for this purpose he is most conveniently placed.

TUBAVION CAR AND LANDING GEAR.

Much interest attaches to the Tubavion machine, as it is a characteristic example of the current trend in favor of all metal construction. Even the wings are constructed entirely from metal, the booms being of steel tubing, the ribs being cut from 1 millimeter aluminium sheeting, while to these is applied a covering of the same material but of half the thickness. Wood only enters into the construction in the form of long ash skids which run from the nose to the tail, and to which are fitted Farman type wheels. Both pilot and engine are located directly beneath the wings in a neat body which has all the appearance of a miniature single seater car minus wheels. The propeller is disposed behind the wings and is driven by means of chain transmission. On looking inside the car one naturally expected to see a clutch pedal, but on making inquiries the writer was assured that there was no necessity for such a provision, the mere throttling down of the engine being sufficient to cut off the propelling force. At the tail end of the machine are arranged the elevators, the flat stabilizing plane, and the vertical rudder. These are made entirely from aluminium sheeting.

LETTER BOX

Aviators or others are invited to have their mail addressed in care of the St. Louis, New York, San Francisco or Paris offices of AERO. First-class mail matter will be forwarded gratis or held until called for. There are letters in the St. Louis office for:

Albert Elton (6), S. S. Jerwan (1), St. James F. Blanchard (1), C. E. Bishop (1), Miss May Gleason (1), L. B. Cozens (1).

Model Aeroplanes

Aviation Association of America

Individuals wishing to join and clubs desiring to affiliate with the Aviation Association of America are requested to communicate at once with the Temporary Chairman, Aviation Association of America, 606 Columbia Building, St. Louis, Mo. There are no dues. The object of the association is to encourage and regulate model and kite flying and gliding in America. Each member properly qualified will be furnished with the lapel emblem of the club. Notices of meetings of affiliated clubs will be published in this column.



Model Flies 682 Feet.—The model of Egbert P. Lott, won the contest at the Newark (N. J.) Y. M. C. A., held in Weequahic Park, February 19, with a flight of 682 feet 4 inches. Francis Walton, Jr., was first in duration and third in distance.

Nelson Talks to New Britain Boys.—Nels J. Nelson spoke to the members of the Aero Club of the Boys' Department of the New Britain (Conn.) Y. M. C. A., February 16.

Results of Philadelphia Meet.—At the model contest held February 17, on Belmont plateau, Philadelphia, under the auspices of the Aero Club of the Central Branch Y. M. C. A., Percy Pierce won the second event with a flight of 537 feet 11 inches, against the wind. W. C. Lannigan, of Oreland, Pa., won the first event for club members, with 21 feet 11 inches; Herbert J. Smith was second, with 21 feet 4 inches.

North Hudson Enthusiasts Busy.—Three members of the North Hudson (N. J.) Junior Aero Club tried their models for long unofficial flights at Guttenberg race track, February 18. Clifford Keely's flew 520 feet; Oliver Habermann's, 416 feet; Edward Krug's 493 feet. Keely is secretary of the club.

Hartford, (Conn.) Club Forming.—W. W. Leonard is organizing a model aero club in the Hartford (Conn.) Y. M. C. A. A large number attended a recent get-together meeting.

Build Six-Foot Monoplane.—Charles and Ginar Collyard of Hinning, Minn., have completed a six-foot monoplane, which is equipped with one-half horsepower motor.

Pacific Coast Record 699 Feet.—Dudley Brown and G. R. Robinson, of the Polytechnic Aero Club of San Francisco, Cal., have established a new Pacific coast model aeroplane record of 699 feet. The former record of 530 feet was held by R. Montagne, of Oakland, Cal. The Polytechnic Aero Club expects soon to become affiliated with the Aviation Association of America.

Cornell Holds Contest.—Aviation at Cornell University gained great impetus as the result of the Aero Club's contest at the Ithaca, (N. Y.) Armory, February 17. Barr Hooper won first honors with his double propelled monoplane. His machine made an actual flight of 125 feet. B. W. Walters, was second with another monoplane, his machine making an actual flight of 111 feet. Eleven of the 20 entries qualified and nine made flights. Hooper's machine made a beautiful flight. Starting from the east end of the Armory the small air craft rose at a constant angle, cleared the balcony railing, and only stopped when it came to the west wall. On the next trial with the weight of the machine nearly doubled, the actual flight was 89 feet. As a rule the double-propelled machines keep their course better and flew with much more steadiness than the single-propelled machines. The monoplane type of machine seemed to make the best showing on the whole. The machines propelled from the rear proved more efficient than those that received their power of motion from the front.

Practices Towed Flights.—Carl Lucia, age 18, of Northampton, Mass., has made several successful glides in a home-made biplane glider drawn by an automobile. The automobile has on it a windless attachment on one rear wheel, and 700 feet of rope extends from that to a snubbing-post on the biplane. When Lucia wishes to stop the forward motion of the glider he releases the rope by means of a lever and glides to the ground.

OAKLAND AMATEURS REVIVE INTEREST

OAKLAND, Cal., February 21.—A revival of interest in model making and flying is sweeping through the ranks of the Oakland Amateur Aero Club, and the sphere of the organization is gradually widening and instilling additional interest among the boys of the entire city.

Since Harvey Morrill made what is thought to be the longest model flight of the Pacific coast, recently, when he flew a tractor screw model 750 feet, many aspirants for the honor have come forward and it is almost certain that the record will soon be raised.

In order to stimulate the interest the Bay City Aero Supply Company has offered materials for a complete glider for the longest flight with a model made by any person in the Bay Cities. In addition to this, Carl Mau of the Oakland Amateur Aero Club and also a partner in the supply company, offers a cup for the longest flight with the neatest and most original model. The contest closes on May 3.

The Oakland Playground Commission will hold an open model contest on March 2 at Bushrod Park when it is expected a large number of new machines will be shown.

The recent election of the Amateur Aero Club resulted as follows: Raymond Montague, president; Edward Gordon, vice-president; Clifton Gordon, secretary and treasurer; William Davis, corresponding secretary and Harvey Morrill, chairman of contest committee.

Members of the club have just completed a series of lectures illustrated by postal card projectoscope, for the purpose of rousing interest in model making and flying. William Davis had charge of the pictures.

INDIANAPOLIS MAY HAVE AIR LINER

INDIANAPOLIS, Ind., February 26.—A \$50,000 corporation to finance and operate a dirigible balloon line between Indianapolis, Cincinnati and Louisville and intermediate cities of Indiana is being promoted by Indianapolis men. Impetus was given the enterprise a few days ago when Albert Lieber, president of the Indianapolis Brewing Company subscribed \$500 "to start the ball rolling."

G. L. Bumbaugh is devoting time to promoting the company. He expects to put the proposition up to the Commercial Club and other civic bodies, urging the value of the aerial line as an advertisement to the city. Promoting trips will be made to Cincinnati and Louisville and Bumbaugh says there is little chance for the project to fail.

Lieber, who will be president of the Aero Club of Indiana when reorganized, says the plans for operating the big airship have been made after close observation of the experiment in Germany, and believes the necessary capital can be obtained without trouble in Indiana.

Bumbaugh has at the motor speedway a large dirigible frame. It may be necessary to manufacture a new bag or to enlarge the bag already made. The size of the ship and its equipment has not been definitely determined and will depend on the support given the company. A new summer and winter garden has been opened recently on top of a new sky scraper, the Hume-Mansur building and it is proposed as a landing platform.

HONORS FLIERS WITH LIFE MEMBERSHIP

Boston, February 24.—The Aero Club of New England's board of directors has elected Harry N. Atwood, Earle L. Ovington and Charles F. Willard to life membership, in recognition of their achievements in aviation. All are residents of Greater Boston. Secretary Shrigley announces a large sale of tickets for the coming banquet of the club at the Hotel Somerset on March 5, when the club will hold its first ladies' night, with Mrs. David Todd and Mrs. H. Helm Clayton as speakers.

Worcester Hears Lecture.—The Board of Trade of Worcester, Mass., heard Albert Adams Merrill, organizer of the Boston Aeronautical Society, talk on "Aviation," February 15.

BALLOON and AEROPLANE FABRICS AND ACCESSORIES

No longer do you need send to Europe for Balloons. We not only manufacture a full line of balloon fabrics—cotton or silk—but we also build spherical or dirigible balloons **complete**.

Goodyear Balloon cloth and construction is the result of exhaustive study in England, France and Germany, and we guarantee our balloons equal to anything purchasable in any foreign country. Our cotton fabric, which we recommend, is made out of high grade cotton and is **rubberized**. Hence it is most enduring.

Our big manufacturing facilities enable us to make quick shipments. You don't have to wait on foreign makers nor do you have any duties to pay. Let us send samples and tell you more about Goodyear Balloon Service.

Goodyear Rubberized Aeroplane Fabric

Damp and moisture-proof, our Rubberized Aeroplane Fabric is the most durable made.

In the rubberizing process, the fabric is subjected to heat many times more intense than it will ever undergo in aerial service. So ordinary heat has no effect upon it.

It can't dry out, stretch, flap, and cut down speed because no moisture can get into it. Nor, for the same reason, can it shrink up and twist the planes out of align-

ment. It is **non-shrinkable, unstretchable, heat-proof, cold-proof, damp proof, rot proof**, and it is always the same. So dependable that every veteran aviator and manufacturer in this country uses it exclusively. Used by Rogers, Ovington, Atwood, Fowler and Brookins in all their big events. Used by the Wright Co., Burgess Co. and Curtiss, The Curtiss Aeroplane Co., Glenn L. Martin, Moisant National Aviators and many other leading manufacturers.

Goodyear Detachable Aeroplane Tires

Veteran Aviators know the importance of landing on tires that can not tear loose. Such tires are Goodyear Detachables. These tires are made like No-Rim-Cut Auto Tires, are most durable and bind the rim in a vise-like grip. Extra-thick treads make them practically non-puncturable.

Single Tube Tires. Strong, light, durable, built in all standard sizes—the only single tube aeroplane tire with valve protected by metal. This keeps valve from tearing loose.

20 x 4 Clincher Tires—the most popular tire for rigid machines. Used in all Curtiss Aeroplanes. Extensible rubber beads. We make tires in sizes to fit any and all machines. Made with or without leather treads.

Bleriot Type Shock Absorbers

Steel Springs snap in cold weather, catch in the tubes, are not satisfactory. The Bleriot Type Rubber Shock Absorbers are the only successful springs for monoplanes. You can now get this type of spring at home. We are the sole manufacturers. Can fill your order promptly and **savingly**. Ask us about our springs. We make all kinds.

Whether you contemplate manufacturing aeroplanes or merely intend to purchase a machine, you should find out all we have to offer you before making any final decision. We have with us all the veterans—both aviators and manufacturers. That speaks for itself.

Tell us your wants

The Goodyear Tire and Rubber Company

(Branches and Agencies in 103 principal cities)

Main Offices and Factory, Akron, Ohio

AERO MART

These Notices Bring Results

ALL WANTS 2c A WORD FOR SALE and FINANCIAL, ETC. 5c A WORD

PAYABLE STRICTLY IN ADVANCE

BOX NUMBERS

If desired, replies may be received at the offices of the Aero Publication Company. Advertisers wishing to take advantage of this convenience will pay 10 cents extra for registration, to cover the cost of forwarding replies.

SITUATIONS VACANT.

AVIATOR—Wanted experienced aviator for exhibition work and instructor, one with license preferred; must sign for six months. State salary and experience. Address Box 241, care Aero, St. Louis.

SITUATIONS WANTED.

AVIATOR—Situation as aviator; one year's experience, can design and build. Box 174, care Aero, St. Louis.

ENGAGEMENTS WANTED—Licensed aviator, graduate of Curtiss school, seeks engagement. Write or wire your proposition to 3649 Mettler St., Los Angeles, Cal.

MECHANIC—I want to become new wizard of the air; age 25, energetic, courageous man; weight 170 pounds; 10 years practical mechanic, aeronautic theoretical knowledge; would like position as mechanic for factory or aviator, with opportunity learn to fly. Will give best references if fair proposition offered. J. Moore, 3004 S. 40th Ave., Chicago, Ill.

WOULD BE AVIATOR—Young man, 25, desires employment where he can learn aviation. Not salary, but a fair opportunity to learn thoroughly the profession, his object. Would make satisfactory contract with party giving him a chance. Can give some security. Henry Artur, 719 South Olive St., Los Angeles, Cal.

MECHANIC—Situation wanted, very neat, refined young colored man wishes position, any kind that gives chance as aviator or mechanic. Eight years a chauffeur. References unexcelled. Particulars address Griffith Gunther, 349 W. 59th St., New York.

MISCELLANEOUS WANTS.

AEROPLANE—Wanted a second-hand one-passenger aeroplane; send photo; must be bargain. E. E. Waltner, Freeman, So. Dak.

AEROPLANE—Wanted Santos-Dumont Demoiselle, complete or in part; let me know what you have. Ralph Wilson, 222 West Vermont St., Indianapolis, Ind.

FOR SALE.

AEROPLANES bought and sold. American Aviation Company, Incorporated, 2957 N. Lawndale, Chicago.

AIRCRAFT SUPPLIES—Aeroplanes for sale and built to order; propellers, models and model stock. Stamp for catalogue. Chicago Aero Works, H. S. Renton, Prop., 164 Wabash Ave., Chicago, Ill.

BIPLANE—50-horsepower Curtiss military-type biplane with duplicate surface and parts. First-class outfit. Price \$2,500. Address Box 98, Mineola, N. Y.

DIRIGIBLE—For sale two complete dirigible airships. C. J. Stroble, Toledo, Ohio.

FUSILAGE—For sale Bleriot-type fusilage, tail and rudder, \$35.00. Stickney, 2407 6th Ave., Moline, Ill.

MONOPLANE—Bleriot monoplane with 50-horsepower rotary, good as new; guaranteed first-class order, \$2,500. Will sell engine only if desired, or monoplane without engine. Box 234, care Aero, St. Louis.

MONOPLANE—For sale, monoplane without power plant, complete, light and strong; splendid workmanship; write for photo. Price \$400.00. Address Box 508, Peoria, Ill.

MOTOR—For sale or trade, price \$175. Address Skygack, care Aero, St. Louis.

KITE—For sale the "Floater" tailless kite; goes higher, lifts more, never dips; put together or taken apart in two minutes. Send for circular. Matthessen, 33 N. 57th St., Philadelphia, Pa.

MODELS AND MODEL SUPPLIES.

MATERIALS—Buy your materials for models from headquarters. We have the latest accessories. Write us your wants, or call. Aeronautical Bureau, World Building, Room 218, New York City.

WOODWORK—Ribs, frames, pontoons, wheels, etc., made to fit your model aeroplane. Catalogue for stamp. Model Rib Co., 4726 Kimbark Ave., Chicago, Ill.

FINANCIAL.

WANTED—\$350 for aviation school expenses. Will give 25 per cent of earnings for one year. Am offered position as aviator with aviation company at \$50 per flight, and expenses. Average four flights per week. A1 aviation company. Was manager last season. Party take position if desire. Will be good investment. References given. Box 240, care Aero, St. Louis.

PATENTS.

PATENT—For sale, U. S. patent standard biplane-type, improvements with it. Your own price. Address Otto A. Fenn, 1512 Vyse Ave., Bronx, New York City.

BOOKS

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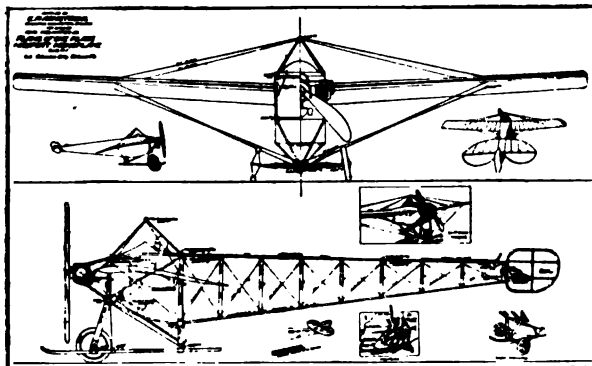
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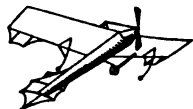
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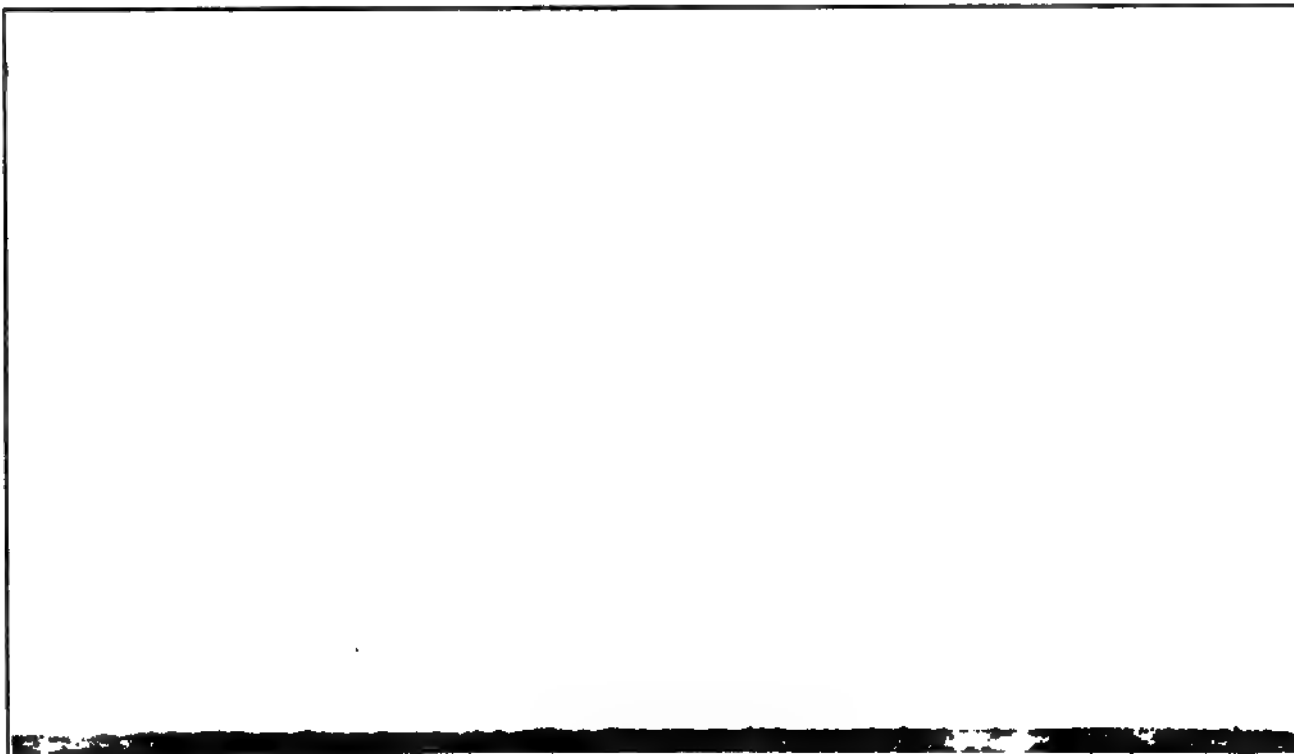
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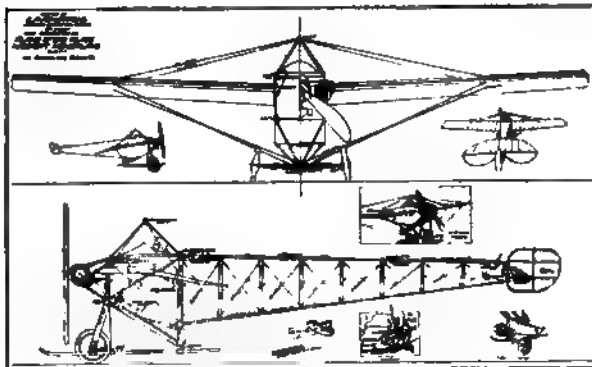
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PARACHUTE JUMP FROM AEROPLANE IS SUCCESSFUL

St. Louis, March 1.—Antony Jannus and Bert Berry, in the Benoist dual-controlled machine, flew from Kinloch field to Jefferson Barracks, 18 miles away, yesterday, and unconcernedly deposited Berry on the parade grounds by parachute, while the biplane flew about 1,500 feet above the ground. They established a new achievement record, which was popularly supposed and even claimed by some experts to be extremely hazardous if not impossible.

Jannus and Berry left Kinloch at exactly 2:30 p. m. amid the rather anxious cheers of the students of the Benoist school, and exactly 20 minutes later were rushing over the Barracks, cutting smaller and smaller circles downward to get the right altitude. While intelligence by telephone is supposed to travel much faster than any mode of mechanical locomotion, in this instance it was found to be rather wanting, as Colonel W. T. Wood, commandant at the post, was at the telephone receiving word that the Benoist biplane was on its way with the adventurous aviator and parachute jumper, a shout went up from the grounds that an aeroplane was in sight. The effect was magical. Practically within 30 seconds the whole force at the Barracks was lined up outside gazing at the first aeroplane to fly over these historic grounds.

All at once one of the seemingly inert passengers was seen to crawl over the footrest, down a small beam running to the skid, out on the skid, dangerously near the swiftly-revolving Simmons propeller, then putting one knee on the little axle, slipped over and loosened the trapeze. The Benoist biplane began to show the effects of the displacement of at least 50 per cent of its load. Just then Jannus, who had been giving more attention to the movements of his companion than to the control of his machine, jammed his foot down on the throttle lever. The peaceful purring of the six-cylinder Roberts motor instantly changed to a spiteful roar. Just then the jumper swung himself from the skid. Before his body stopped oscillating, he gave the snatch block a quick jerk, and as far as the science of aeronautics was concerned, launched himself into an unknown world.

All this happened in much less time than it takes to tell it; there being a complete understanding between Jannus and Berry as to their respective duties and actions. This was the first intimation to the soldiers below that not only were they witnessing a fine aeroplane demonstration, but also aeronautic history in the making. The aeronaut was now suspended below the aeroplane, which was making about 50 miles an hour against the wind, and more than 1,000 feet from the ground. All at once the aeronaut and the parachute shot downward, and for a distance of about 300 feet accelerated its speed at

a sickening rate. While this only occupied a few seconds, it seemed like minutes to the officers and troops below, until the parachute opened and Berry came sailing down. He landed just back of the mess hall, off the parade grounds, and the well-trained soldiers showed no inclination to break rank until commanded by the officers, when they went hurrying over a small embankment around the mess hall, returning with the aeronaut on their shoulders. Berry was elated, and not at all damaged, for he made as easy a landing as usually experienced when leaping from a balloon.

PARACHUTE AFTER THE JUMP

In the meantime Jannus was having an interesting time of his own. The minute the aeronaut with his weight and head-resistance left the machine it headed upwards at a dangerous angle, threatening to stall and cause trouble. This was followed by a quick push of the lever forward. Then he was forced to make two circles around the parade ground to lose his altitude. He brought the machine to rest in front of Colonel Woods' quarters and received his congratulations.

In the meantime the manager, Tom W. Benoist, who waited at the factory in University City until Frank M. Bell, one of the students, notified him by telephone that Jannus was getting away, then he sprang into his automobile and drove as fast as traffic laws and his machine would allow him to the

The practical end of this new experiment in aeronautics was worked out by Benoist, Antony Jannus and Frank M. Bell, who had expected a parachute-jumper from Indianapolis to make the jump. In the meantime Berry, a well-known jumper, came to St. Louis to winter. He volunteered his services. As Berry was on the ground and would keep down expenses, it was decided to let him have the first try at it.

After experimenting it was found that it would be hard and dangerous to drop from a speeding aeroplane if there was not some means to prevent the parachute being blown out of place the instant the aeronaut was balancing himself on the trapeze below. This was accomplished in several ways, but the most practical was found to be a large flaring tube something like a short megaphone. The parachute was fastened by rubber bands into this tube, which was allowed to hang large-end downward. This bell could be drawn up, as it pivoted at the small end when it was not in use, thereby presenting much less resistance to the line of flight. It was constructed so that after the aeronaut was on the trapeze he was able to cut loose through means of an ordinary snatch-block. The aviator could draw the bell back up and fasten same and go ahead and hunt a landing. There are several more details, all of which are being patented by the Benoist company.

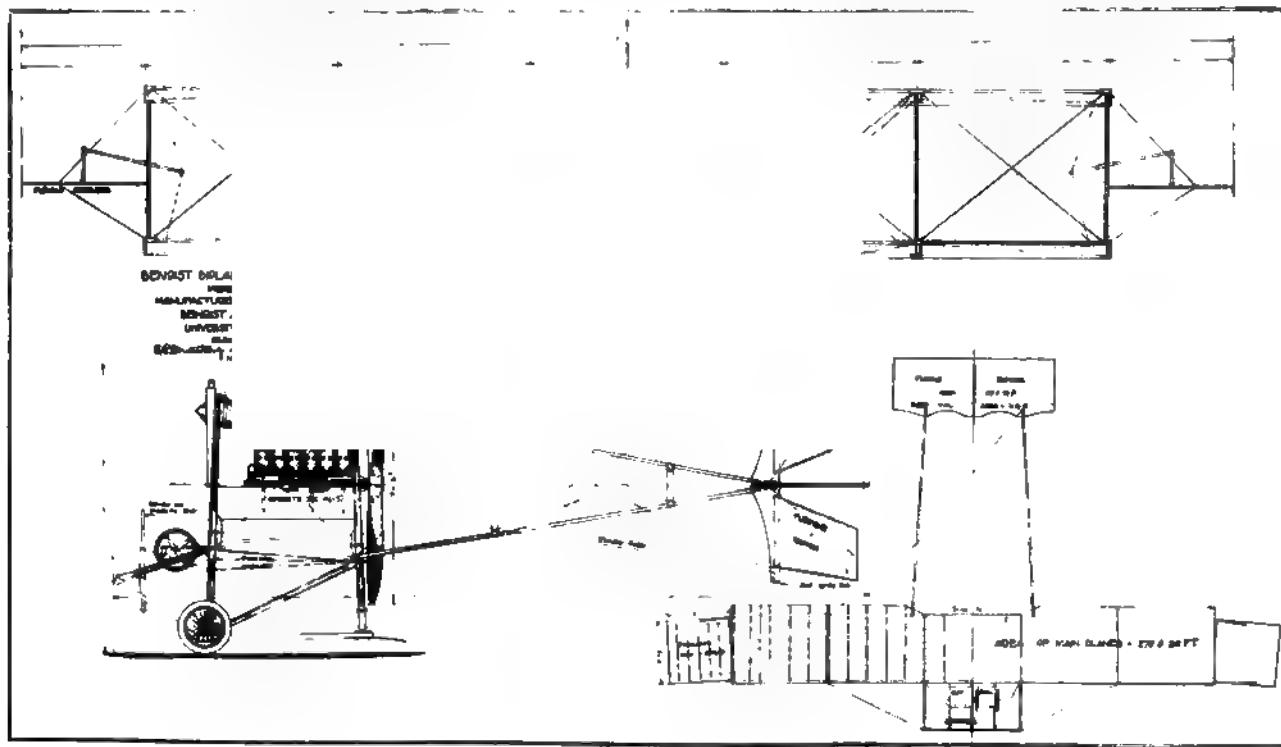
The officers at the Barracks gave their opinion as to the practicability of a parachute carrying aeroplane in the time of a war, some seeming to think it was only good as a thriller in exhibition work, while others thought it might have a great bearing on future warfare.

Someone advanced this: "Two thousand aeroplanes could be constructed for the Government at the cost of one battleship; this being the case, a flotilla of 1,000 aeroplanes, each one carrying a soldier with a parachute, would be able to transport 1,000 men a distance of one hundred miles in, at most, a couple of hours, unload them and come back to the original base and in 14 hours of daylight could handle probably more than 5,000 to 10,000 men, and often alter the whole aspect of a campaign in a country where there were no railroads or where they were out of commission or in the hands of the enemy."

The Benoist company is going to do the stunt again at Kinloch the first good Sunday, and then will probably have nothing more to do with it until future events find practical use for it, although it has received a telegram from a New York promoter offering them a guarantee to give one drop somewhere near Manhattan.

LEFT TO RIGHT--BERRY, JANNUS, BENOIST

Barracks, making the distance of about 14 miles through the congested district of St. Louis in a little less than an hour. However, when he arrived at the post the biplane had been there more than a half-hour, and Jannus was preparing to start back to Kinloch. As soon as gasoline was procured, Jannus returned without any incidents, while Berry and the parachute were brought back to St. Louis in the automobile.



SCALE DRAWINGS OF THE BENOIST BIPLANE USED

GILL DESCRIBES NIGHT ACCIDENT

LOS ANGELES, CAL., March 1.—Howard Gill, who was injured while flying his Burgess the night of January 25, during the Dominguez meet, will leave here soon for Baltimore. He expects to stop several days in St. Louis, where he will be guest of honor at a meeting of the Aero Club of St. Louis. Roy Knabenshue presented Gill with a sterling silver trophy from the St. Louis club, while he was in the California hospital. It commemorates Gill's endurance record of 4 hours 16 minutes 35 seconds, which is still the American record.

In discussing his accident, Gill said, "It was entirely due to confusion on account of the darkness. Close to the ground it was easy to judge the machine's action, but after reaching a height of more than 100 feet, it became impossible to tell at what angle the machine was flying. Although I kept my elevating lever at the usual position for ordinary climbing, the motor, which had been fitted with a new cylinder, failed to develop the full power. Consequently the machine was stalled. In stalling the speed of the machine through the air becomes so slow that the controls lose their effective-

carefully examined by Phil Parmelee and J. C. Turpin, who have been operating similar machines for the past two years. Both said that all controls and parts that could have caused the accident were intact."

LONG ISLAND HAS OPEN SEASON

GARDEN CITY, LONG ISLAND, March 3.—The snow is off the ground at the Nassau Boulevard Aerodrome, and the aviators and their enthusiastic followers are beginning to reappear. Today quite a number of automobile parties visited the ground. George W. Beatty, who has now a dozen pupils, was, however, the only aviator to fly.

Beatty took out his Wright shortly after noon and was giving instruction until darkness set in. On one of these trips he flew over to the Mineola field. Phillip W. Wilcox was on hand with a barograph to watch Dr. Belden and Horton fly for their licenses. Much to their disgust, Beatty at the last moment, refused to allow either Belden or Horton to take up the machine alone. "I can't go back to Terre Haute and tell my friends that I can fly unless I have a license to prove it," grumbled Dr. Belden.

Apart from Beatty's flying there has been little doing on the field during the past six days. Billy Fair is making a couple of pontoons for Beatty, who is one of the latest converts to the hydroaeroplane. These pontoons will be so arranged that it will be possible to lift them up out of the way of the wheels, which Beatty does not intend to dispense with. Beatty wants a machine able to alight on both land and water. Fair is also at work on a biplane. Zolla Garcia is finishing the monoplane which he expects to sell to the government of San Domingo.

There were at least 100 visitors on the Mineola field today. The fliers were Roland Middleton and George Rodgers, who are piloting Baldwin biplanes for Peter McLaughlin. One of these machines, built by Rodgers, was finished only this week and Middleton took it out on its trial trip. Middleton made several circuits of the field, and afterward pronounced everything to be entirely satisfactory. Both aeroplanes have been fitted with four-cylinder 50-horsepower Roberts motors. On Wednesday McLaughlin, Rodgers and Middleton will sail for Porto Rico on an exhibition tour. The itinerary includes San Juan, Ponce and San Domingo. On June 1 McLaughlin will open a school at Mineola with "Bud" Mars as chief instructor. Harry Eno, the Japanese, has not made much progress with his hydroaeroplane. He has been busy rebuilding the machine that Joe Stevenson wrecked some weeks ago.

On Thursday Mars paid a visit to Hempstead Plains and made a flight in one of the McLaughlin machines. Mars is still encased in various kinds of surgical fixings as the result of his accident at Erie, Pa., last year.

FIVE NATIONS ENTER CUP RACE

NEW YORK, March 2.—At least five nations will take part in this year's Coupe International d'Aviation. These are the United States, Great Britain, Holland, Belgium and France. The Englishmen and the Dutchmen were the last to cable over challenges, while February 29 was the last day for sending challenges it is possible that others are on the way. A challenge mailed the last day of February by any club affiliated with the International Aeronautic Federation is valid. England has entered two aeroplanes for the race.

Cortlandt Field Bishop will represent this country at a special conference of the International Aeronautic Federation to be held in Paris, March 20, for the purpose of formulating the rules governing contests.

WRIGHT TERMS DO NOT SATISFY

Cablegrams from London state that the Royal Aero Club of the United Kingdom is not satisfied with the understanding given by the Wright Company regarding foreign-made aeroplanes taking part in the cup race. The guarantee, signed by Wilbur Wright as president, reads that in the interest of good sport the Wright Company will permit representatives of foreign nations to participate in the 1912 race. The Royal Aero Club cabled to New York asking for an understanding with the Wrights that they would take no action whatever against the British aviators or their aeroplanes for a period of three months from the date of their arrival. The reply of the Wright Company stated it would guarantee nothing beyond the assurance already given.

HOWARD W. GILL.

ness, just as a boat which is left to drift in the stream, or an automobile standing still; for in either case one can turn the steering wheel without it having any effect. An aeroplane in which the speed has fallen below that necessary to sustain it in the air at a constant height is in a similar position.

"Darkness prevented me from realizing that the machine was stalled, and in making a turn the warping of the wings had no effect. As the plane was already on a bank it tipped on over. In the day-time such an accident would be impossible, as an aviator would know at once when his machine started to stall and would point its nose down to retain the necessary momentum.

"To make doubly sure it was not through any breakage of the plane that the accident had occurred, the machine was well guarded through the night and the next morning was

CURTISS HYDRO SATISFIES FRENCH EXPERTS

JUAN-LES-PINS, FRANCE, February 21.—Hugh Robinson completed his demonstration of the Curtiss hydroaeroplane before the officers sent to observe the trials by the French and Russian governments. The tests were carried out successfully in every particular and the officers were highly pleased with the American machine.

In one test Robinson was required to climb to an altitude of 3,000 feet and volplane down with the motor dead. This was done successfully, the barograph registering the altitude, and the officers were satisfied. He has also flown when the waves were six feet high. Consequently it is probable that Russia and France will each place large orders for similar machines.

tained the crowd with spiral glides and figure-eights, Kearny flew over the bay and returned with a fish dangling on a line, Blanche Scott gave a 10-minute exhibition, while Martin, Hillery Beachey, Cooke and Fish carried mail and did other things assigned to them.

On the day following Cooke encountered engine trouble while up 200 feet and barely escaped a smash on the infield fence, coming down on the race track, by skillful maneuvering.

Beachey impersonated a female aviator to the great delight of the crowd. Bad winds prevailed during the afternoon, and Miss Scott did not go up. Half of the days' proceeds were donated to Mrs. Eugene Ely.

Saturday proved a poor day in the matter of attendance, but the program was a good one, in spite of the wind. Kearny repeated his fishing stunt and was caught at it. The wrapping paper from the fishmonger's caught on the running gear, where it could not be dislodged.

Sunday brought out a large gate. Martin, Parmelee, Lincoln Beachey and Fish went after altitude and nearly disappeared from sight. Kearny and Hillery Beachey engaged in a speed contest and Cooke flew from his home to the grounds in a new Curtiss-type biplane equipped with his new Roberts six.

Twenty-two thousand dollars was the result of the six days, and the aviators divided 65 per cent of this, or \$14,300. A considerable purse was made up for Hoff, who is reported as doing nicely.

Fish, Parmelee, Martin, Miss Scott and Kearny are preparing to go to Sacramento, where they are under engagement to fly on Friday and Saturday under the management of Dick Ferris and Charles K. Hamilton.

LAWMAKERS SHOW RIVALRY

ALBANY, N. Y., February 28.—The joint hearing before the Senate and Assembly Judiciary Committees concerning the various aviation bills before the legislature developed into a battle royal. The delegates of the Aeronautical Society, which sponsored the Duhamel bill, found that their rival organization had quietly introduced another bill through Senator McManus. The Duhamel bill, supported by the Aeronautical Society, asks the governor to appoint a commission which will supervise the licensing of aviators, aeroplane manufacturers, public exhibitions and public races. The McManus bill takes no notice of manufacturers, but gives the secretary of state power to license aviators under the rules and jurisdiction of the ruling body in the United States.

ATWATER MAKES RECORD FOR NEW CURTISS

LOS ANGELES, February 28.—A new American speed record was established at San Diego, Cal., on February 26 by W. B. Atwater, of Orange Valley, N. Y. Atwater, using a Curtiss biplane, equipped with a 75-horsepower motor, made a complete circuit of the five-kilometer course (3.1 miles) in 2 minutes 31 1-5 seconds. This is at the rate of 73.08 miles an hour. The former American speed record was made by A. Leblanc in a Bleriot monoplane at Belmont Park, New York, during the International meet of 1910. Leblanc's time was 2 minutes 44 4-5 seconds.

In view of the fact that Atwater had only taken his pilot's license 10 days prior to the trial, his performance is considered remarkable. He expects to enter the Chicago International meet in 1912, and possibly take part in the race for the Gordon Bennett cup.

FIRST WRIGHT HYDRO FOR NEW YORK

NEW YORK, March 2.—The Wright Company is preparing a hydroaeroplane which will be shipped here as soon as it is finished. The craft will be used to establish the first Wright hydroaeroplane station on the Atlantic seaboard. Arrangements are being made to secure a piece of property on Long Island Sound to erect a dock and shed. It is expected that by the middle of summer at least half a dozen hydroaeroplanes will be in commission at this place.

J. S. Berger, acting as booking agent, will stage a race between three aeroplanes and a special train from Montgomery to Birmingham, Ala., during the week of March 25.

HUGH ROBINSON IN THE RIVIERA.

Louis Paulhan, who has taken the French rights for the Curtiss hydro, advertises the machine in the French publications as "Le Triad-Paulhan," this being a combination of Curtiss' name for the hydro and Paulhan's own name.

Paulhan learned to fly the hydro in about 20 minutes. Since learning he has made an over-sea flight from here to Cannes, being 40 minutes in the air.

In the middle of March Robinson will go to Monaco to participate in hydroaeroplane races there in connection with the international motor boat events. After that he will travel to Russia and about the last of April will return to the United States.

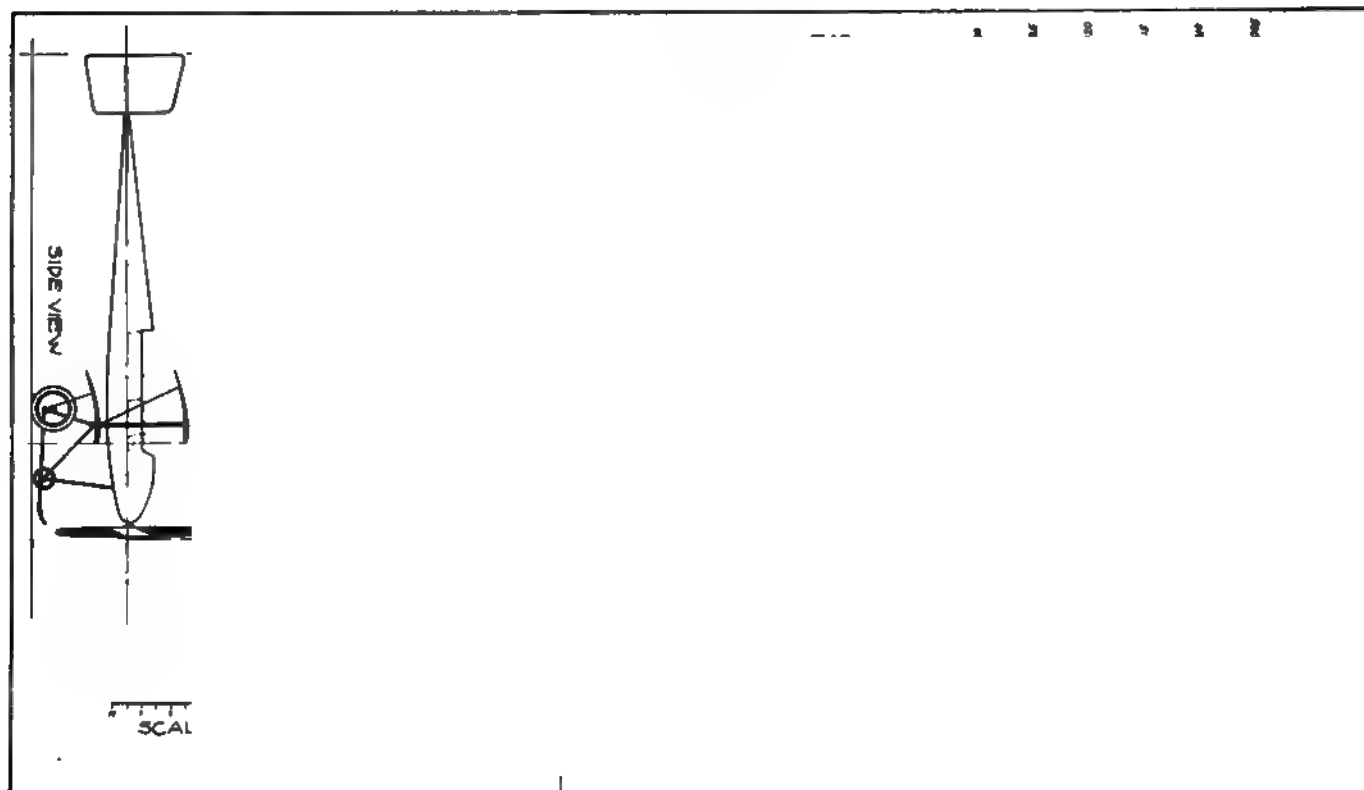
OAKLAND FLIERS DIVIDE \$14,300

OAKLAND, CAL., February 25.—With five aviators in the air at various altitudes, Beachey a mile high, gliding to earth with motor shut off and Weldon B. Cooke arriving on the field from his home, in a new Curtiss-type biplane, the six-day exhibition held under the auspices of the Oakland Chamber of Commerce came to a close this evening. The large crowd of spectators went to their homes satisfied that they had seen a programme of aerial stunts such as has never before been produced here.

After a two-day interlude, the "meet" was continued on Washington's Birthday before a crowd of 15,000 persons. Beachey went through his various stunts, Parmelee enter-

DESIGNING A WEIGHT-CARRYING ARMY PLANE

By E. R. ARMSTRONG



To further illustrate the use of the tables and diagrams given in "How to Design a Modern Aeroplane," the design of a biplane complying with the conditions and requirements of the United States Army will now be given.

In order that the tests may be passed with ease, even under the worst conditions, it is assumed that the specifications are as follows: Speed in horizontal flight, 55 miles per hour; useful load, 600 pounds; weight of machine empty, 1,200 pounds; fuel and oil for six hours' flight, 200 pounds; total weight in flight order, 2,000 pounds; climbing speed, 250 feet per minute; seating capacity for three arranged so as to permit of the largest possible view, control to be in triplicate; gliding angle, one in six.

For ease of transportation the Breguet type of biplane is adopted as this machine possesses the feature of demountability in a very large degree. To land and start from a ploughed field it is necessary to use large wheels in the landing gear, and such a combination of engine and propeller that will give a high ground thrust.

In order to determine the most suitable wing section it is necessary to approximate the weight of the machine without passengers or supplies. By comparing the different machines that competed in the recent French military trials it has been determined that the average weight of a biplane capable of carrying two passengers and an aviator will be something less than 1,200 pounds when fitted with a motor of from 80 to 90-horsepower.

Assuming 1,200 pounds as the weight of the empty machine and a rate of fuel consumption based on the use of an 80-horsepower motor, at the rate of 10 gallons of fuel and oil per hour, the weight of the necessary supplies for a run of six hours will be about 200 pounds, making the total weight of the machine in order of flight 2,000 pounds.

The efficiency curve of the wing section adopted is shown at the right of the design chart. This curve shows the same general slope from two to eight degrees, indicating that the efficiency of this type of wing will be the same within these

limits. In order that the surface will not be too great, an angle of incidence of seven degrees will be adopted as the normal flight angle. At seven degrees the efficiency curve shows a lift of .00215 pounds per square foot at a speed of one mile per hour. At a speed of 55 miles per hour, Fig. 16 of the previous article* to show a multiplier of 3,025, this multiplied by .00215 gives a lift of 6.5 pounds per square foot at a speed of 55 miles per hour.

It has been previously shown that one surface above another, as in biplane practice, affects the lifting power of both surfaces to such an extent that the lift of both is reduced about 25 per cent, so that the lift per square foot of a biplane will be but 75 per cent of that of a monoplane of similar surface. In order to arrive at the area of the supporting surface it is necessary to take 75 per cent of 6.5 as the maximum loading per square foot, if both planes are of the same length. Following the practice of the latest and most successful designers of weight-carrying biplanes, the top span is made of considerably greater span than the bottom, the overhanging ends of the top span being warpage for lateral stability.

The center section, of true biplane form will have a span of 30 feet, using a chord length of five feet and a length to breadth ratio of six to one. This will give an area of 300 square feet. This amount of surface will support 75 per cent of 6.5 pounds per square foot, or 1,460 pounds for the total of 300 square feet. This leaves 540 pounds to be supported by the overhanging ends at the rate of 6.5 pounds per square foot, giving a length of 8.3 feet to the overhanging plane at each end, and a total span of 46.6 feet. The total area is 383 feet.

The efficiency curve shows a drift of .00019 pounds per square foot at a speed of one mile per hour. At a speed of 55 miles per hour the drift will be .00019 multiplied by 3,025, the multiplier of 55 miles per hour, this gives a drift or resistance of 0.575 pounds per square foot. For the area of 383 square feet the resistance will be 220 pounds, which at a

*"How to Design a Modern Aeroplane," *Aero*, Vol. III, Nos. 15 to 20.

"He came down so steep and so far that the gasoline was cut off high in the air and the motor stopped, but he made the landing in a vacant lot safely, missing a telephone line by about five feet."

Bratton rebuilt the machine used by Studensky from three or four wrecks of Curtiss-types. It is single-surfaced and has a spread of 28 feet. The motor is a Roberts six.

There are 15 pupils at the National school. Two Roberts six-cylinder and one Roberts four-cylinder motor is the motor equipment used.

speed of 55 miles per hour will require 46.2 effective horsepower.

Following the general instructions given in the design of the speed monoplane, plot the plane resistance curve at the different speeds and angles necessary to support the weight of 2,000 pounds, using the efficiency curve shown to the right of the design chart. Keep in mind that the effective lifting surface is only 308 square feet while the drift is experienced by the total area of 383 square feet. The average spread of the main planes is 38.3 feet, by the use of Fig. 20* determine that the length over all should be 32.5 feet, area of tail plane 38 square feet, area of elevators 26 square feet, and area of rudder 26 square feet.

Using these dimensions and areas, and keeping in view the special requirements, the design shown is given, from which the total head-resistance can be calculated and the necessary horsepower obtained. The total body resistance is computed to be equivalent to 12 square feet of normal surface. By the use of Fig. 3, plot the body resistance curve and from the plane resistance and body resistance, plot the total resistance. The total resistance when multiplied by the speed in feet per minute and divided by 33,000 will give the curve of horsepower required for level flight. The climbing speed must be 250 feet per minute, so the applied horsepower necessary at 55 miles per hour must be increased by such an amount necessary to raise 2,000 pounds 250 feet per minute. This means the expenditure of 500,000 feet pounds of energy per minute which, when divided by 33,000, shows that a little more than 15-horsepower will be required in addition to that necessary for horizontal flight.

The chart shows that at 55 miles per hour about 47-horsepower is required, so a net effective horsepower of about 63 is required to comply with the conditions. Assuming an efficiency of 70 per cent of the propeller, a motor of at least 90-horsepower should be used. In order to have a surplus of power, a motor capable of developing about 100-horsepower would be advisable. If a motor capable of developing 90-horsepower at 1,100 revolutions per minute is used, with an efficiency of 70 per cent and a slip of 35 per cent the applied horsepower at 55 miles will be 70-horsepower using a propeller nine feet in diameter with a pitch of 6 feet 9 inches.

Assuming that the power of the motor is proportional to the speed of revolution, plot the horsepower applied curve. This curve shows that if it were possible to use a propeller in which the pitch could be varied in flight, that when sufficient power is used to climb at the rate required enough power has to be used which would permit of a horizontal flight speed of 69 miles per hour. The same result could be obtained if the motor used would permit the number of revolutions to be increased to 1,600 per minute without any falling off in power.

The gliding angle is next plotted and shows that the requirement of an angle of one in six is easily met.

This article concludes the series of articles on the design of the modern aeroplane and will shortly be followed by a series covering the construction of the modern aeroplane.

CORRESPONDENCE

[1064] A. J., Greenwich, Conn.—It is not necessary to be a citizen of the United States in order to obtain a pilot's license.

[1065] H. S., Cambridge City, Ind.—The three-seat Etrich monoplane is 48-foot span and 37 feet over all. A 25-horsepower motor will not give enough power to fly the cross-channel type Bleriot. The practical way to become an aviator is to take a course of instruction at one of the schools advertised in AERO. After you have become an aviator you may either buy your own machine and fly for yourself, or you may fly for some company on a salary and commission basis.

An aviator usually gets a percentage of all prize money that he wins. Louis Bleriot was born in France in 1872.

[1066] K. F. W., Cleveland, Ohio.—Cypress is not a wood suitable for aeroplane construction. The Bleriot XI wing is 13 feet 6 inches long, 6 feet 10 inches chord, with a maximum camber of $4\frac{1}{2}$ inches.

[1067] R. S., Fort Worth, Tex.—The Bleriot XI requires about 240 pounds thrust with a suitable propeller; the machine should not weigh over 750 pounds complete with aviator. About 65 yards of fabric will be necessary to cover the wings, elevators and rudder.

[1068] P. W., Norwalk, Ohio.—The ratio of the total resistance to the lift of the Nieuport monoplane is about one to five at an angle of six degrees; at this angle the center of pressure is 46 per cent back from the leading edge.

[1069] F. A. J., Ben Avon, Pa.—An article telling how to obtain the pitch of model propellers will appear in a future number of AERO.

[1070] J. R. N., Watervliet, N. Y.—Your solution of the balancing of the lifting tail type of monoplane is correct and easy to use by those of sufficient mathematical knowledge. This method was not used, as it was not considered desirable to go beyond the use of ordinary arithmetic.

[1071] H. S. B., Rome, N. Y.—The term "drift," as used in connection with supporting surfaces of aeroplanes, refers to the head-resistance of the planes. The pitch of a propeller is the distance it would advance in one revolution if there were no slip. It is usually defined as a ratio of the diameter.

[1072] E. P., Fort William, Ont.—In order to tell you the correct angle of incidence for your biplane, we must know the weight of same complete with aviator. Also send a diagram showing the curvature of the rib.

[1073] J. D. H., Joplin, Mo.—The barograph is a mechanical instrument, being a combination of a barometer and a rotating drum on which the height is registered by a recording pen. A compass is used to give the direction of flight. There is no instrument that will give the speed of the aeroplane with reference to the ground, owing to the varying air currents, both as to amount and direction.

STUDENSKY MAKES OVER-CITY FLIGHT

GLVESTON, Tex., March 2.—Paul Studensky started Galveston on Wednesday afternoon when he started at the National Aeroplane Company's school and circled the eastern end of Galveston Island, in a 25-mile flight, which lasted about 40 minutes. His altitude was about 3,000 feet at times. When over the housetops at an altitude of 2,000 feet, he was forced to glide to a landing in the city. He came down without breaking a wire in a vacant lot near Fifty-second street and Avenue I.

Studensky has a reputation for being slow and careful, but the speed with which he learned to fly the Roberts-motored Curtiss-type is contradictory. Never having flown any machine but a Bleriot, Studensky had been practicing for several days with an old-style Curtiss-type. When he got into the new type he went for a straight-away of a mile up the beach, then another back.

The third time he flew farther and made a right-hand turn, then back down the beach and over the flying field, where his gasoline gave out and he landed on rough ground, breaking a little wood. This was at 10 a. m.

By 4 p. m. the machine had been repaired and Studensky was out for his over-city flight at 5:30 p. m. After this he returned to the field. The next day at 5:30 p. m. he was out again. He went for altitude and kept it up until he had done 4,000 feet.

Describing this flight, Lester V. Bratton, chief of the school construction work, said, "He went far out over the water and then started a volplane toward home, but he changed into a right spiral with full speed and my heart about stopped as I watched him."

In the Field of Foreign Activity

Readers of AERO visiting the French capital will be welcome at the Paris bureau of AERO, 14 Avenue Bois de Boulogne, where Charles Roditi, French representative, will be found. M. Roditi will be pleased to direct visitors to the points of aero interest and to be of any assistance possible.

Eiffel's New Laboratory.—The new laboratory of Gustave Eiffel for testing models of aeroplanes and plane sections of existing machines is about to be open at Auteuil, France. It is provided with apparatus sufficiently powerful to produce currents having a velocity of 90 miles an hour. Near the Eiffel laboratory is the Institute of Saint-Cyr, where tests of full-size aeroplanes can be made. The combination of the two laboratories makes the most perfect testing station now in existence.

Aeroplanes in African Wilds.—On February 16 at Dakar, near Timbuktu, in French East Africa, Lieutenant Fequant on a Nieuport monoplane accompanied by M. Carle on a Bleriot monoplane made a flight of about 125 miles out over the wilds of Africa and return. It was the first flight made in this part of Africa.

Germany to Have Military Competition. The German minister of war has announced that a military competition for aeroplanes will be held this summer in Germany along the lines of the French and English trials. The amount of the prizes have not yet been announced.

Paulhan-Tatin Makes Low Power Speed Record.—At Rheims, on February 16, Chambenoit, driving a Paulhan-Tatin "torpedo" made a closed circuit of 10 kilometers at the rate of 87 miles per hour with a 50-horsepower Gnome motor. This is a record for the power used.

New German Passenger Record.—At Munich, February 16, Rendzel, driving a biplane, made a flight of more than nine minutes with five people aboard. This is the German passenger record to date.

A Modern Match Race.—A dispute having arisen between Bechereau, chief designer of the Deperdussin Company, and Sommer, relative to the merits of their machines, a match race has been decided upon. As these machines are the fastest in the world an interesting contest is assured.

One Hundred and Twenty Passengers in Two Days.—On February 15, at St. Cyr, France, five officers of the French Army carried 90 officers and 30 cadets as passengers during the visit of the latter to the aerodrome. The flights were carried out without accident or trouble of any kind.

Another "Dead One" Who is Very Much Alive.—In our England contemporary *Flight* of February 24, we note that W. H. Hoff was killed by a fall in a Curtiss biplane at the San Francisco meet. This is reminiscent of the erroneous report which appeared in *L'Aerophile* last year of the death of Bud Mars, and leads us to warn our foreign friends to be more careful of our aviators.

Tabuteau Sets New Mark.—Tabuteau, driving a Morane-Saulnier monoplane, set up a new record for all distances from 200 to 300 kilometers, when flying at Pau, France, on March 1. He flew 100 kilometers (62.1 miles) in 51 minutes 7 4-5 seconds, 200 kilometers (124.3 miles) in one hour 42 minutes and 17 seconds, 250 kilometers (155.3 miles) in 2 hours 7 minutes and 54 seconds. In two hours even he covered 234 kilometers, 431 meters. (145.7 miles).

Sommer Moves to Mourmelon.—Sommer, the well known constructor whose monoplane permitted Bathiat to attain a speed of 93 miles per hour, has transferred his works from Mouzon to Mourmelon.

Austria Estimates \$5,000 for Aeroplanes.—The war estimates for the current year include the sum of \$5,000 for an aeroplane training station for Austrian army aviators. It is expected that more than \$500,000 will be subscribed from private sources with which to purchase aeroplanes.

Woman Aviator to Open School.—Fraulein Nelly Beese, noted German aviatrix, will open an aviation school at the Jahannisthal flying field, near Berlin. Fraulein Beese obtained her pilot's license last August from the German national club. She flies an Etrich-Rumpler monoplane.

SCOTT'S BOMB-DROPPER TRIED IN FRANCE

PARIS, February 12.—Former Lieut. Riley E. Scott, who is now in France, has been demonstrating his bomb-dropping device, which is attached to an Astra-Wright biplane. The French War Department has at its disposal the sum of \$20,000 to be paid as prizes for bomb-dropping contests,

LIEUT. SCOTT'S DEVICE ON A FARMAN BIPLANE, which has increased the interest in this branch of aviation activity.

Recent trials from an altitude of from 500 to 3,000 feet proved that it was comparatively easy to place all bombs within a 60-foot circle, while from an altitude of 500 feet most of the bombs were placed within from five to seven feet of the center. From the greater altitude the penetration of the bomb in the ground was more than three feet.

The bomb, which is of torpedo shape, weighs 16.5 pounds. It is so mounted in the carrier that it can be dropped by pressing a lever at the moment the target comes into the field of view of the telescope that is part of the apparatus. This telescope is so mounted that it can be inclined at different angles to the line of advance of the aeroplane, the angle varying according to the height and speed of the aeroplane. These various adjustments are shown on the graduated parts of the instrument, it being only a matter of a moment's time to sight the telescope for the determined altitude and speed.

E. PERCY NOEL, Founder-Editor

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The Editor is pleased to consider MS and photographs for publication, but only material that is likely to prove of interest to the readers of AERO. The Editor cannot undertake to answer technical inquiries except in the columns of AERO.

THE INTERNATIONAL RACE COURSE

The speed attained by French-made aeroplanes in recent official tests bringing the maximum speed attained over a course similar to the one required for the International aviation cup race, to nearly 102 miles an hour, gives promise of a speed of 110 miles an hour when the international cup race is held.

Such speeds as these being possible, the spectacular possibilities of the international competition grows. With five countries competing in the event, it may be said that the zenith of sensationalism in

aeroplane events is near at hand. But to save the contestants from disaster, to prevent the course itself from becoming a fatal battle-field, much care must be exercised in its selection.

When one aeroplane travels more than 100 miles an hour, close to the ground, as is the custom in speed contests, there must be a clear course, with unobstructed landing spaces. When several fly at such speeds simultaneously, every precaution must be taken to safeguard the aviators who combat with time and distance in that battle royal. One cannot say to the contestants, "This is an aerial race, fly in the air."

On the contrary, it is necessary to have an unobstructed course in every sense of the word. A house here and there, a pole nearby, a clump of trees in the center, a road to cross, or any similar impediment, no matter how insignificant, is a hazard to the lives of the contestants in such an event.

Long Island might be selected as the site for such a race course if that locality were not so thoroughly settled in the level and not too remote districts, that it is practically impossible to find there a five-kilometer course of the proper description. It can hardly be obtained without tremendous expense.

Other localities offer good ground for this international race course, but they are nearly all near cities where the energetic enthusiasm needed to finance the extremely large prize offering necessary is not sufficiently great, and where the opportunity for reimbursement is not ample.

There is perhaps but one exception in any part of the United States, west of the Rocky mountains. It is possible there to provide the course that the contestants in this aerial classic are entitled to and without which it is madness to compete.

It will cost a great deal of money to make the course available, in the first place, and more to put it in condition for the event. But the city on the edge of which this situation lies has the energy to provide the funds to do it. Those who have the best interests of aviation at heart believe that its central location, its great record of last year and its fine spirit of clean sportsmanship, make it the ideal place for the nations to congregate.

It is Chicago.

Vedrine Again Breaks World's Record.—According to cable reports Jules Vedrine, piloting his 140-horsepower Gnome-engined Deperdussin racing monoplane broke the world's record for speed on March 1, flying at Pau, France. He flew for one hour, during which time he covered 101.66 miles.

British Fleet to Cost \$850,000.—The estimates for the British Army for the year 1912-1913 include the sum of \$850,000 to be sent for aeroplanes and supplies, \$300,000 to be spent for aeroplanes alone. With this amount the government expects to purchase at least 160 aeroplanes. The British military aeroplane competition for which prizes amounting to \$55,000 are offered, is open to the world. The competition will be held in June.

Among the Aviators

J. L. Callan have been granted aviator's licenses. America now has 102 certified aeroplane pilots.

John C. Burkhardt, who has been doing engineering work in New York for the past year, has returned to his home in Portland, Ore., where he will continue his work.

Weldon B. Cooke is building a biplane for his former mechanic Williams. When it is completed the pair will tour the country giving exhibitions.

Juan Pesados flew 50 minutes in his Wright-type biplane with eight-cylinder Hall-Scott motor, at San Francisco recently. His plane is being rebuilt with one propeller and he plans to fly to the C. A. C., field at Easton, Cal., where he has leased a hanger.

Harvey Crawford, of Los Angeles, was shaken up by a bad landing, from 200 feet, after he had glided down from 1,200 feet with his motor dead, according to reports.

Robert G. Fowler, after giving an exhibition at Gainesville, Fla., February 24, flew to Waycross, Ga., where he flew at a free meet, carrying a motion picture operator, February 28.

Beckwith Havens will fly at Ft. Smith, Ark., in connection with the free bridge celebration there this month.

Frederick Dobell, who has been flying a Kirkham-motored Strobel hydroaeroplane on Lake Pontchartrain, New Orleans, found a new use for it, February 29. He was able to find the body of a drowned man, which men in boats had been unable to locate since February 18.

Louie Mitchell is not pleased with New Orleans. At the exhibition he gave there February 25, the gate receipts were \$15. Mitchell gave back the money with "they need it worse than I do," and went to Baton Rouge, La., where he gave an exhibition with his Wright remodeled as a hydro. He flew over and landed on the Mississippi river, there, February 28 and 29.

Joseph Richter, armed with a permit from the War Department, arrived at the Army aviation field at Augusta, Ga., February 25, where he will fly his Rex Smith biplane with Hall-Scott motor.

Dr. F. N. Bell, a Benoist pupil, is waiting only for favorable weather to qualify for his pilot's certificate at Kinloch field, St. Louis.

LIEUT. PARALA, CUBAN ARMY PUPIL AT MIAMI

Phil O. Parmelee is planning a cross-Atlantic flight. Recently William G. Adams, of Los Angeles, wrote the Navy Department asking for a 42-knot torpedo boat destroyer to accompany the aviator. As the fastest boat in the navy makes only 32 knots, Secretary Meyer denied Adam's request.

Henry Hayden Sands, a Yale graduate who has been flying in Egypt, was quarantined on his arrival in New York February 29 was temporarily quarantined. In the opinion of the surgeon of the *Cedric*, the flier was convalescing from smallpox. Sands circled the pyramids shortly before embarking.

Earl Sandt is now making preparations for a cross-country tour from Erie to Toronto, by way of Buffalo. The tour which will start early in May is being managed by Edward W. Moffet, who is now in Buffalo.

J. Lee Hammond has been appointed aviator expert of the Japanese government, according to reports received at his home in Marlboro, Mass. His employer, Capt. Thomas Scott Baldwin, expects to establish factories in Tokio and Pekin. Hammond will go to Pekin after finishing his work in Japan.

Cliff Turpin, who has been spending the winter in California, expects to pack up his machine and return to Dayton about March 10. It is understood that he be employed by the Wright Company as instructor.

Capt. Paul Beck, 14th Infantry, will be ordered back to his regiment, May 1, under the ruling of the War Department, which allows an officer only four years in some special branch of the service. An effort is being made to obtain a special ruling.

Albert Mayo, Frederick A. Hoover, R. C. St. Henry and

FROM THE COMPASS POINTS

Wrights Are Active.—Reports from Dayton indicate unusual activity in the Wright Company factory. It is said that a new biplane is being brought out with a Nieuport-type of wing, while 1912 model is soon to appear.

Burgess Company to Build Racer.—The Burgess Company and Curtiss is working on a racing biplane, which, it is understood, is intended for competition in the elimination race to select the American team of cup defenders, if such a race be held.

Hitchcock on Mail-Carrying.—The subject of carrying United States Mail by aeroplane was taken up by Postmaster General Hitchcock in his annual report to the President, recently made public. He said, "The first aerial dispatch of United States Mail occurred in September last, when 43,000 pieces were carried from Aeroplane Postal Station No. 1, on Nassau Boulevard to Mineola, Long Island. The progress being made in the science of aviation encouraged the hope that ultimately the regular conveyance of mail by this means may be practicable. Such a service, if found feasible, might be established in many districts where the natural conditions preclude other means of rapid transportation."

Assmann's Trip Delayed.—William F. Assmann has temporarily abandoned his part of the match distance race, which was scheduled between him and J. H. Wade, Jr., on account of the disintegration of his balloon envelope from sulphur in the gas. It is understood that Wade will go ahead with his preparations, J. C. Hulbert to be his aide.



Temporary Office:
318 North 8th St.
St. Louis.

E. Percy Noel,
Secretary.

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1,016,359, February 6, 1912.—James Robertson Porter, London, England. An airship having a plurality of superposed non-rotary annular deflecting surfaces having a common axis, and a centrifugal propeller mounted centrally to force the air drawn from the underside against and between said deflecting surfaces.

1,016,363, February 6, 1912.—John L. Roche, Chicago, Ill. An aeroplane comprising upper and lower planes, a pair of parallel rods connecting the front and rear edges of each of said planes, a plate carried by each pair of rods mediate their ends, rectangular sockets projecting from the opposing faces of said plates, a rectangular-shaped tubular member having its ends secured to said sockets, and an equilibrator consisting of an elongated rigid member rectangular in cross section slidably mounted in said tubular member and extending below said lower plane.

1,016,609, February 6, 1912.—Frank Cosby Carpenter, and Floyd Smith Carpenter, Louisville, Ky. A composite plane structure comprising central planes having a downwardly concave dihedral angle of about 90 degrees and outer planes joining the inner planes to form downwardly convex dihedral angles of about 105 degrees.

1,017,733, February 20, 1912.—Ernest C. F. W. Bliesath, Seattle, Wash., a supporting plane rectangular in plan having its front and rear edges normally in the same horizontal plane and in a higher horizontal plane than the transverse axis of the supporting plane, the side of said plane being hipped on said axis and inclined upwardly from the body of the plane and from the four corners or angles thereof.

1,017,767, February 20, 1912.—Albin F. Kraftsik, Mount Pleasant, Pa. A detaching device for an aerial carrier, comprising a suitably supported carrier bar, a trigger bar of a length greater than said carrier bar, a pliable connection extending from each end of said carrier bar, each connection being secured to one end of said trigger bar, two pivotally connected lever arms ending in a beak hook, each arm being secured to one of said pliable connections intermediate of its ends, said beak hooks normally overlapping one another, and a trigger cord connected to said trigger bar.

1,017,820, February 20, 1912.—Henry M. Sverilus, Chicago, Ill., a propeller, comprising a rotary supporting member, a plurality of hub members adapted to be axially mounted on said supporting member, a single blade on each of said hub members, the adjacent ends of said hub members being provided with uniformly spaced, interfitting projections and indentations, the number of projection on each of such adjacent ends of the hub members being a common multiple of the factors 1, 2, 3, etc., up to the total number of blades.

1,017,989, February 20, 1912.—Richard G. V. Mytton, deceased, by Donald Barker, executor, Los Angeles, Calif., a flying machine provided with a sustaining surface having dihedrally disposed lateral portions, and whereof the angle of

incidence is positive except at the rearward central portion and the forward lateral portion thereof.

1,017,998, February 20, 1912.—Orson L. Pickard, Columbus, Ohio. In combination with an aeroplane, an auxiliary sheet of wind proof material normally spread upon one of the planes, means for instantaneously releasing said sheet from its spread condition, and means for simultaneously lifting one portion of said sheet to admit the air therebeneath.

1,018,190, February 20, 1912.—Olof Helsing, Sandhem, Sweden, an aeroplane including a gondola, bearing rods rigidly fixed thereto and extending upward to form a vertical frame, bearings in each of said bearing rods, arms pivotally mounted in said bearings, bearing planes pivotally supported by said arms, a regularizing device adjustably carried upon said gondola and rods of equal length coupling said regularizing device to said bearing planes at the front edges of the latter, whereby said bearing planes are adapted to be feathered or tilted reversely fore and aft automatically in accordance with their tilting laterally whereby the equilibrium of the aeroplane will be automatically controlled.

1,018,205, February 20, 1912.—Felix Michau, Paris, France. A flying machine comprising a heavy body an engine carried thereby, a seat also carried by said body, and beating wings pivoted to said body, each of said wings comprising a rod, means for causing said rod to describe a conical surface of revolution without rotating about itself, a surface secured to said rod, a second surface connected to the joint of the wing so as to follow the latter in one direction only, said first mentioned surface being inclined at its outer end and unfolded relatively to said second surface, means for rotating the joint of the wings in a vertical plane, means for beating said wings to support the machine during flight, means for steering the machine, together with folding means enabling the machine to start on the ground.

1,018,223, February 20, 1912.—Chas. G. Wieland, New York, N. Y. A propeller comprising a hub, and a plurality of blades projecting therefrom provided with a plurality of straight and a plurality of curved conduits running from near said hub toward the outer edges of said blades substantially parallel with the faces of said blades.

1,018,237, February 20, 1912.—Wm. Deutscher, New York, N. Y. A propeller comprising a shaft, means for driving the same, propeller blades mounted on said shaft and a continuous helical vane surrounding said shaft comprising a plurality of complete turns and terminating in one of said propeller blades.

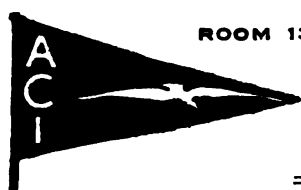
1,018,400, February 20, 1912.—Thomas Lough White, New York, N. Y. An aeroplane having an independently movable part, a Venturi tube disposed axially in manner to create a suction force during flight, and means utilizing said force in the control of said movable part.

1,018,413, February 27, 1912.—Orravill L. Dunton, North Adams, Mass. A flying machine having oppositely disposed main sustaining planes supported on axes at their inner ends to swing in substantially the plane of their sustaining surfaces, whereby the center of sustaining pressure may be moved toward the front or rear with respect to the center of gravity of the machine, a pair of supplemental planes in rear of the main planes hinged on substantially horizontal axes, and connections whereby the supplemental planes are swung vertically in accordance with the front and rearward movements of the main planes.

1,018,474, February 27, 1912.—Wm. John Hastings Beach, Wellington, New Zealand. A flying machine embodying a frame composed of a number of triangular members arranged vertically parallel and having horizontal bottom bases and connected together by tie bars extending along their apexes and bases, two main planes secured across the upper part of such frame, one behind the other, a subsidiary short plane secured across the bottom of the frame beneath each main plane, level with said bases and a separate propeller for each of said main planes.

1,018,645, February 27, 1912.—Wm. Howell Walters, Broad Haven, Eng. An apparatus for teaching the act of aeroplaning, comprising a stationary support, a seat universally connected thereto, means for rocking said seat to destroy the equilibrium thereof, and means operable from said seat to restore the equilibrium thereof.

THE AERO CLUB OF ILLINOIS



OFFICE
ROOM 130, THE AUDITORIUM
CHICAGO

FLYING FIELD
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Opening Session of Technical Conference

At the opening Technical Conference Thursday evening, February 29, at the Auditorium, the general history of Aviation was presented in an acceptable manner by James S. Stephens, who is peculiarly qualified by his familiarity with the local beginnings in the art.

Illustrations were exhibited by both Mr. Stephens and Montraville M. Wood, the latter covering the present development of the aeroplane.

Of the club membership there were present many well known men, of whom Andrew Drew and William Avery, Mr. Chanute's former collaborator, spoke of some past experiences.

Following the addresses and pictures the individual members stimulated by desire as well as by refreshments, gave further expression of opinion.

The programs to follow were approved as part of the general outline of the series, and it was decided to hold the second session Thursday, March 7, at eight o'clock sharp, at which the subject of "Contemporary Machines" will be discussed.

All technical men are invited to take part in these informal meetings.

HAROLD W. ROBBINS, *Secretary*.

Interest In Gliders

At the first session of the glider division of the Aero Club of Illinois, at the Auditorium Hotel, Wednesday, February 21, there was great enthusiasm at the prospects of organizing such competition at the Cicero Field. Owing to the blizzard which held the city in its grip, the attendance was performance small, and it was remarkable that there were so many present.

The business handled at this meeting was largely in connection with the initial organization, although general discussion developed the great extent of technical and engineering interest among the members. This latter will be given greater play at succeeding meetings, and at the regular engineering session. Several groups were formed who will undertake the construction of gliders to be ready for trials at the first open weather.

The special committee on rules and regulations for this work was selected as follows:

Sydney V. James, chairman; Leonard R. Dickerson; Herbert H. Frey; James R. Offield, and agreed to get together at luncheon Saturday, February 24.

Personal Paragraphs

Andre Ruel, the Bleriot pilot, who has been operating the Umbrella and Plaster at the Cicero Flying Field, found during the past week that a few fingers were not sufficient to stop a rotating motor.

In driving the first mentioned circular plane over the field he slowed down to investigate the performance of a new

propeller which was on trial, and upon standing up in the machine lost his equilibrium and had his hand drawn in under the motor guard by the revolving engine. An interesting experiment, causing only a few more or less damaged fingers.

Thomas Preston Brooke has finally decided to honor Cicero Field by housing thereon his original type biplane, designed to be operated with the Brooke non-gyro motor, both of which have been secluded at a private field up to the present time.

Otto W. Brodie at the club headquarters on February 27th, reported great progress in the work of the several aviators on the Florida beaches. He goes back to St. Augustine at once, but expects, within 30 or 40 days to be back on the Cicero Field, for more extensive work than his of last year.

Common remark of experienced men upon returning to Chicago from tours, "The Cicero Flying Field looks awfully good to me."

Technical Committee Decides Program

CHICAGO, March 2.—Following the very successful opening meeting of the technical series the committee got together at luncheon today for quick action and decided on the following calendar to be included in the prospectus which will shortly be issued to all club members:

Ses-	Date.	Subject.	Speaker.
1.	2-29.	Historical and General.	James S. Stephens.
2.	3- 7.	Contemporary Machines.	Montraville M. Wood.
			Wm. B. Stout.
			Andrew Drew.
			J. C. Mars.
3.	3-21.	Systematic Design, Con-	Sydney V. James.
		ventional Types.	
4.	4- 4.	Concrete Illustrations of	H. W. Robbins.
		Design Problems.	Eugene Rummel.
5.	4-18.	Tendency of Development.	James B. Lund.
6.	5- 2.	Evolved Types, Original-	W. S. Romme.
		Ideas.	
7.	5-16.	Comparative Details and	James S. Stephens.
		Criticism.	M. B. Wells.
8.	5-30.	Structural Design.	

Complete directory of officers of the Aero Club of Illinois:			
President..	Harold F. McCormick	Harvester Bldg.	Harrison 6200
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MODEL CLUB CONTEST

Model aeroplanes will be the fad of the boys of Chicago if the flying contest held yesterday afternoon at the Auditorium, under the auspices of The Aero Club of Illinois is any criterion.

Over 200 boys were present, 50 machines were flown, the length of flights being only limited by the room in which the contest was held, this being 90 feet long and some 40 feet wide. The contestants were members of the aero clubs of various high schools, the winner being Arthur Nealy of the Hyde Park High School Club, who in the last flight of the day succeeded in sending his machine for the full length of the 90-foot room to strike the wall at the far end with considerable force some 10 feet from the floor. Without the wall to hinder, this flight would easily have been 150 feet.

The second longest flight was made by Harry Wells of the Lake High School Aero Club. His machine making a very steady flight to a distance of 73 feet.

The third best flyer was made by Lawrence Harper of the Calumet High School, this machine going 71 feet before it touched the floor. All of these machines were constructed by the boys who flew them, it being one of the rules of the contests that no parts could be bought. The power was ob-

tained by the use of twisted rubber bands. It is the plan of the club to hold an aero meet at least once a month from now on, this contest being open to entries from any model aero club in the city made up of boys over 14 years old.

At the same meeting the organization was perfected, constitution and by-laws voted on and adopted. The complete organization of affiliated Chicago model clubs being gathered under the one name of The Illinois Model Aero Club. As soon as the weather permits contests will be held outdoors at the Aero Club of Illinois field, located at the end of the Douglas Park Elevated Line, where full sized flying machines will also be flying every day.

Already there is an unusual amount of interest in the model flying machine movement, hundreds of boys having already enrolled their names as members of the central organization, while outside towns are signifying their intention of contesting against some of the crack flyers of the local organization during the Gordon Bennett meet next summer. It is even possible that the New York Model Aero Club will send its representatives to race against the Chicago team at that time, while other clubs in Detroit, St. Louis and Milwaukee have something of the same idea under consideration.

Yesterday's contests included, besides the flying contest, a race between model gliders, small flying machines without motors, designed to be let loose from a height, to slide to the ground by their own stability of design. The longest flight of the day was made by a Lancheester model with wooden wings made by T. L. Jones of Crane High School, this gliding a distance of 80 feet 6 inches. This distance was done outside of contest hours however, so that it did not count in the final awarding. The prize in this class went to L. King of the Calumet High School, whose machine glided for 58 feet 4 inches. Smaller machines were tried out in a different class. The winner in the small class was R. Smith of Lyons High School, whose 9 1/4-inch model flew 37 feet 4 inches.

A model by C. Fisher came second with a flight of 33 feet 7 inches. Another contest of similar nature will be held by the Model Aero Club two weeks from next Saturday, entrants being eligible from any club whether in Chicago or out of it, provided the members are 14 years of age or over. A silver cup is to be offered for the best flight of the season. The model work is in charge of Wm. B. Stout for the Aero Club of Illinois, who has been showing the boys the principles of model design.

With the start already had it is expected that by the end of the summer every high school in the city and suburbs will be represented in the model organization. Inquiries from clubs or individuals interested in model work and not yet affiliated should be addressed to The Aero Club of Illinois, Auditorium Hotel, Chicago.

TEMPORARY HEADQUARTERS:

606 Columbia Building
Cor. 8th and Locust Sts.
Saint Louis

Individuals wishing to join and clubs desiring to affiliate with the Aviation Association of America are requested to communicate at once with the Temporary Chairman. There are no dues. The object of the Association is to encourage and regulate model and kite flying and gliding in America. Each member properly qualified will be furnished with the lapel emblem of the club. Notices of meetings of affiliated clubs will be published in this column.

BULLETIN

Lapel Buttons Ready This Week

All qualified members of the Aviation Association of America, or members of individual clubs affiliated with the association are entitled to receive the member's button free. The buttons have been promised by the manufacturers for Friday of this week, so that they should be in the lapels of all members before the end of next week.

The button is oval in form, similar to the insignia of the association, reproduced at the head of this column. It is enameled in blue and white, with the letters and the aeroplane in gold. It is a handsome button, which anyone may

well be proud to wear.

Fine Records In Cypress Hill Contest

At Cypress Hill, Long Island, N. Y., February 25, in a contest held by the Cypress Hill Model Aero Club the following were the winners: First prize, club event, silver cup, J. F. McMahon, 307 Railway avenue, Brooklyn, N. Y. Distance, 1,026 feet.

Second prize, club event, Robers' Jack knife, Lester Ness, Cypress Hill. Distance, 482 feet.

Third prize, club event, club colors, Harry Eckhardt, Cypress Hill. Distance, 533 feet.

JUNIORS, CLUB EVENT.

First prize, fountain pen, Walter Rover, Cypress Hill. Distance, 419 feet.

Second prize, R. Misor, Cypress Hill. Distance, 312 feet.

OPEN EVENT, FOR BRONZE MEDAL.

First, F. W. Walton, Jr., Newark, N. J. Distance, 920 feet.

Second, Chas. Latelner, New York Model Aero Club. Distance, 915 feet.

Third, F. Hodgman, Flatbush, Long Island. Distance, 853 feet.

A. Selly of Flatbush flew a special model for duration which made a record of 58 seconds, which is a new American record.

Frank Schober gave a very beautiful exhibition flight of a new long-distance biplane. It flew 902 feet.

Second St. Louis Meeting Friday

The first organization meeting of St. Louis junior enthusiasts was held at the quarters of the Aero Club of St. Louis last Thursday. Half of the organizers were unable to be present on account of unexpected examinations at the Manual Training School booked for the day following. Accordingly it was decided to hold future meetings on Friday evening, when regular studies would not have a chance to interfere. The next meeting will be held Friday, March 8, at 7:30 p. m. All young men interested in model aeroplanes, gliders or kites are invited to be present. Officers will be elected and other important business decided.

At the Thursday meeting the question of open-air or indoor contests was considered and the opinion seemed to favor outdoor flying because of the difficulty to find a building large enough for flights of any worth while length.

The matter of grounds for gliding was taken up and it was the sense of the meeting that the Aero Club of St. Louis should be asked to provide a gliding hill at Kinloch and to allow members of the junior club the use of it.

E. R. Armstrong, technical Editor of AERO, gave an interesting review of the scientific possibilities of work done for pleasure and sport with models, gliders and kites. At the conclusion of his talk he offered to answer any questions and the offer was taken up by nearly all of the organizers present.

The club will be affiliated with the Aviation Association of America.

Elizabeth Meet In April

The Aero Club of the Y. M. C. A. of Elizabeth, N. J., will hold a model aeroplane meet, open to any boy in the city, Saturday, April 20. The planes entered must be built by the entrants. There will be prizes for long-distance flight, altitude, quick starting, and construction.

COOKE BREAKS WOOD AT OAKLAND

OAKLAND, CAL., February 27.—Weldon B. Cooke made a bad landing from 100 feet today at Emeryville race track and landing on a fence destroyed the entire center section of his Curtiss-type biplane.

\$1,000 MOTOR CONTEST CONTINUES

New York, March 2.—The Frontier motor was given its preliminary trial in the \$1,000 contest of the Automobile Club of America this week. The trial was held under the personal supervision of C. W. Miller, the inventor of the engine. In its official trial the motor turned 1,400 revolutions per minute. The motor is rated at 55-horsepower, is light-cylindered and normally turns at more than 1,100 revolutions per minute. The conditions require that the motor run at normal speed for three hours continuously. The score will be determined on efficiency, reliability and economy of fuel consumption.

FROM THE COMPASS POINTS

First Borel-Morane Imported.—The first Borel-Morane to be seen in this country was also the first aeroplane to pass through the customs house at New Orleans. The monoplane, for which the Paul Croix Automobile Company is American agent, was consigned to Ernest Mathis, manager for George Mesatch and arrived last week.

Montgomery Meet Begins.—The Montgomery, Ala., aviation week began Monday, with the fliers Fred Shneider (Shneider biplane), Paul Peck (Columbia biplane) and George Mestach (Borel-Morane monoplane) on the field. Vandiver Park is the scene of the flying. The aviators are stopping at the Gay-Teague Hotel.

Kantner Booked at Donaldville, La.—Harold Kantner, Moisant aviator, is booked to fly at Donaldville, La., March 6 and 9 with a 50-horsepower Moisant monoplane.

Birmingham Events in April.—Eight fliers are promised for the meet at Birmingham, Ala., scheduled for April 8 to 13. They are Oscar Brindley, George Mesatch, Fred Shneider, Paul Peck, Charles Richter and A. Greshier. The money is being raised by the Business Men's League and the automobile association. \$10,000 will be raised.

New Benoist Pupils.—After a demonstration in six inches of snow at Kinloch, March 3, R. T. and L. T. Anderson enrolled as pupils in the Benoist school.

Burgess Self-Starter Used.—Walter Brookins tried out a Burgess hydroaeroplane fitted with automatic starting motor at Palm Beach, Fla., last week, which proved successful. In using the new Burgess Company and Curtiss device, the aviator stands by his seat and turns a crank which actuates a gear on the propeller shaft. The attachment weighs only six pounds.

Lectures at Muscatine.—A. F. Keggle lectured on "Aviation" at a meeting of the Knights of Columbus of Muscatine, Ia., last week.

Hamilton, O., Exhibition.—The Retail Merchants' Association of Hamilton, O., will contract for an aeroplane exhibition during its home-coming week, either June 5 and 8 or June 21 and 22.

High Wind at Daytona Beach.—On account of the high winds prevailing in the locality of Daytona Beach, Fla., Phillips Ward Page, the Burgess aviator, has been able to fly only one day in the past week. On February 25 he made seven flights, giving H. L. Hattermer and J. L. Gray each two lessons. He is using only the Burgess land machine. B. F. Eleck, who had been practicing there with his Bleriot-type, completely demolished his machine, February 26, falling about 70 feet. Eleck was not injured except for a few bruises.

May Have Cup Defender.—There is a movement on foot in Chicago to get an American-made machine for cup defender and a decided feeling in favor of eliminatory trials to select the American team in the International aviation classic.

Booked in Indiana.—The American Aeroplane Company of Chicago will have one of its Curtiss-Farman types flown at Chesterton, Ind., the second week in April.

FOREIGN NOTES

French Flying Regiment.—Plans for the world's regiment of aviators for the French army are well under way. It will number about 400 aviators. This is the first of a number of regiments that will be organized soon. A single order, though scattered among different factories, has just been given for 328 aeroplanes for army use. Every fort or military camp will have a training ground 80 acres in extent.

French Army Aviator Killed.—At Pau, France, March 2, Lieut. Pomentonia was killed in an aeroplane accident.

Russia Enters Balloon Race.—The Russian Imperial Aero Club has entered the Gordon Bennett International balloon race which was won by Germany last year. This year's race will start from Stuttgart, Germany. France, England and America have already signified their intention to compete.

Military Post For Morocco.—A French mission composed of Captain Clavenad, Lieuts. Tretarre, Dho-Hu and Van der Vaers has left for Morocco where they will establish three aviation camps. They took with them four 50-horsepower Bleriot-Gnomes, spare parts and motors, 33 military mechanics, several automobiles, as well as a motor truck. At Marseilles the mission will take on board 2,000 litres of gasoline and 200 kilogrammes of oil. As soon as the camps are established they will fly from Casablanca to Fez.

To Test Parachute.—Some very interesting parachute experiences will take place shortly at the Julviay aerodrome. Camille Guillaume the engineer aviator has invented a new parachute which he will test in real flight. He has constructed a special monoplane for this purpose and once in the air he will stop his motor and jump out of his machine, abandoning it to its fate.

More Than 1,000 Licensed Pilots.—The Royal Aero Club of Great Britain has now issued 183 pilot's licenses. At the end of 1911 France had issued more than 600, while 102 have been issued in America. Germany claims more than 150, although few German military fliers apply for license. The rest are scattered among the other nations of the world.

WITMER CARRIES MANY HYDRO PASSENGERS

MIAMI, FLA., March 3.—Society has taken up the fad of going as passengers in the hydroaeroplane with Charles C. Witmer, who is in charge of the Curtiss school here. Among the passengers carried by Witmer during the past week are F. F. Proctor, Jr., and Mrs. Proctor, of New York City; J. W. Argonbright, of New York, and Miss Anna Spillman, also of that city. Miss Anna Spillman's flight was worthy of note.

Friday Witmer took Miss Spillman as a passenger, leaving Miami at 6 o'clock in the morning. They flew to Cape Florida, a distance of a little more than 12 miles, made the turn around Florida Cape Light and back to the starting point. The machine ascended to a height of 1,200 feet. The return trip from Cape Florida Light to Miami was made over the ocean for the entire distance, some three miles off shore. The distance covered was about 25 miles, and the time required 24 minutes. On the way from Miami to Cape Florida Light, the hydroaeroplane had a following wind from 10 to 15 miles an hour, which gave a speed of 65 to 75 miles an hour; but on the way back this speed was retarded by an equally strong head wind.

Elbridge Company Announces New Motor

The Elbridge Engine Company of Rochester, N. Y., announces the new 1912 line, a cut of the six-cylinder 60-90-horsepower size being shown herewith. The company claims the lightest engine in the world for the power developed, the weight of the engine shown being only 155 pounds complete.

The new four-cylinder Aero Special, with a total piston displacement of about 400 cubic inches weighs, net, less than 90 pounds; the weight of the motor complete with magneto, carburetor is 115 pounds. This is certainly a light motor for the power, which is claimed to be from 40 to 60-

NEW ELBRIDGE MOTOR.

horsepower. This light weight is in part accounted for by the use of a special alloy for the cylinders which possesses but one-third the weight of the usual cast iron type. This alloy has proved to give results equal to that obtained with cast iron, at the same time making it possible to greatly reduce the weight without sacrificing strength.

The features of the new designs that will appeal to the practical aviator is the use of the muffled exhaust and self-starter. It becomes rather tiresome on a long cross-country flight to listen to the unmuffled exhaust of a powerful motor, while the necessity and utility of the self-starter will not be questioned by anyone.

The company is also making arrangements to supply complete aeroplanes of the different standard types fitted with Elbridge motors. The new Elbridge catalogue is now ready and can be obtained by writing the company at the factory, 90 Culver Road, Rochester, New York.

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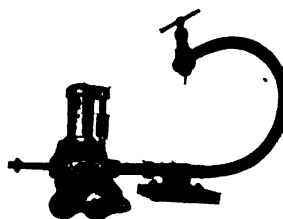
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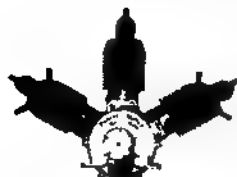
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Edited by E. PERCY NOEL

MILITIAMEN MAY LEARN AT ARMY SCHOOLS

By J. W. MITCHELL.

WASHINGTON, March 9.—Considerable interest has been created in National Guard circles throughout the country by the announcement that the regular army was to include National Guard officers among its regular aviators and would train them when possible. This is true enough, but the plans are still too nebulous to warrant the conclusion that any National Guard officer who wants will have an aeroplane and teacher sent him and be instructed in flying while the government pays for the breakage.

What the War Department has really done is to set up a list of qualifications for military aviators rather more severe than the test for a regular pilot's license. The ranks of military aviation are open to the officers of the regular army, when the Signal Corps can get its hand on them, and to officers of the National Guard, subject to the approval of the Secretary of War. No plans have been formulated for training the National Guard officers. When the application of one for training is approved by the Secretary of War, he may be detailed to the nearest convenient aviation camp of the army and there taught so that he can qualify for his military license. When he has passed this test he will be given a certificate by the Secretary of War and thereafter will be carried on the army register as a Military Aviator. The War Department will thus be kept advised of his identity and can call on him if he is ever needed.

The whole matter so far is largely on paper. All the War Department has done is to issue a circular to those interested as follows:

"The following 'Qualifications for Military Aviators,' approved by the Secretary of War, are inclosed for your information:

QUALIFICATIONS FOR MILITARY AVIATORS

"Military aviators must be commissioned officers of the regular Army or organized militia.

"All officers who qualify as military aviators according to the conditions enumerated below will receive certificates from the Secretary of War covering such qualifications and will be carried on the Army Register as 'Military Aviators,' with the date of qualifications in each case.

"To obtain such certificate the candidate must fulfill the following requirements:

"1. Attain an altitude of at least 2,500 feet recorded by a suitable barograph.

"2. Make a cross-country flight of at least 20 miles (ten

miles going and ten miles returning), at a minimum height of 1,000 feet.

"3. Make a flight of at least five minutes' duration with the wind blowing at the rate of at least fifteen miles per hour (indicated by an anemometer).

"4. Carry a passenger to a height of at least 500 feet and on landing come to rest within 150 feet of a previously designated point, the engine being completely cut off prior to touching the ground. The combined weight of passenger and pilot must be at least 250 pounds.

"5. Execute a volplane from an altitude of at least 500 feet with the engine completely cut off, and cause the aeroplane to come to rest within 300 feet of a previously designated point on the ground.

"6. Make a military reconnaissance flight of at least 20 miles for the purpose of observing and bringing back information concerning features of the ground or other matter which the candidate is instructed to report upon. This flight must be made at an average altitude of 1,500 feet.

"The tests for 'Military Aviators' will be conducted under the direction of the Chief Signal Officer of the Army, at such times and places, and before such boards of officers as may be convenient. The names of officers who qualify and the date of such qualification will be reported to the Adjutant General of the Army."

The only application from the Guard for training that has been approved so far is that of Lieut. Col. C. B. Winder, of the Ohio National Guard. He has been notified to report at Augusta.

Orders are now before the Secretary of War for his approval, calling the military aviators back from their winter camp at Augusta to College Park, outside of Washington, by April 1. This means they may get back about the middle of April.

The Wright racer that was ordered by the War Department will be the first one of the new War Department aeroplanes to be received at College Park. Orders have been issued for its delivery in place of the Wright weight-carrying machine that was to have been delivered May 1. The machine will be equipped with a six-cylinder Wright engine of unnamed horsepower and is specified to make 65 miles an hour.

The Army aviators at Augusta have been experimenting with some new types of tent hangars designed for them in Washington and intended for field use when an aeroplane has to be operated away from a permanent hangar. None of the

several types has yet been officially approved.

Additional Physical Requirements and Examination

The visual acuity without glasses should be normal. Any error of refraction requiring correction by glasses or any other cause diminishing acuity of vision below normal will be a cause for rejection. The candidate's ability to estimate distances should be tested. Color-blindness for red, green, or violet is a cause for rejection.

The acuity of hearing should be carefully tested and the ears carefully examined with the aid of the speculum and mirror. Any diminution of the acuity of hearing below normal will be a cause for rejection. Any disease whatever of the middle ear, either acute or chronic, or any sclerosed condition of the ear drum resulting from a former acute condition will be a cause for rejection. Any disease of the internal ear or of the auditory nerve will be a cause for rejection.

The following tests for equilibrium to detect otherwise obscure diseased conditions of the internal ear should be made:

1. Have the candidate stand with knees, heels, and toes touching.
2. Have the candidate walk forward, backward and in a circle.
3. Have the candidate hop around the room.

All these tests should be made with the eyes open and then closed; on both feet and then on one foot; hopping forward and backward, the candidate trying to hop or walk in a straight line. Any deviation to the right or left from the straight line or from the arc of the circle should be noted. Any persistent deviation, either to the right or left, is evidence of a diseased condition of the internal ear, and nystagmus is also frequently associated with such condition. These symptoms, therefore, should be regarded as cause for rejection.

The organs of respiration and the circulatory system should be carefully examined. Any diseased condition of the circulatory system, either of the heart or arterial system, is a cause for rejection. Any disease of the nervous system is a cause for rejection.

The precision of the movements of the limbs should be especially carefully tested, following the order outlined in paragraph 17, G. O. 66, W. D., 1909.

Any candidate whose history may show that he is afflicted with chronic digestive disturbances, chronic constipation, or indigestion, or intestinal disorders tending to produce dizziness, headache, or to impair his vision should be rejected.

ASKS REPORT FROM SECRETARY OF WAR

WASHINGTON, D. C., March 9.—A report on the progress of aviation throughout the world was asked of the War Department in a resolution presented to the House by Representative Sharp (Dem.) of Ohio, today. It directs the Secretary of War to transmit to the House any information he has obtained from foreign governments on the progress made by students of navigation of the air, either for scientific or war purposes, unless it was incompatible with the public service.

The development of air craft in the United States also was asked, and the Secretary was directed to report the number of aeroplanes and balloons owned by the United States, the extent of the investment and the use to which they are being put. The system of instruction of officers and enlisted men of the service and what extensions to the plan are to be made is requested of the Secretary.

Sharp's resolution was referred to the committee on military affairs.

NEW YORK WOMEN'S SOCIETY ORGANIZED

New York, March 11.—A well attended meeting of the Aeronautical Society of Women was held in New York at the society's headquarters on February 29. Several prominent aeronautical speakers gave interesting lectures. Wilbur R. Kimball, the aviator and inventor, spoke and A. Leo Stevens related some of his experiences. Ralph Emerson gave an interesting account of the exhibits at the recent Paris Salon, while Carlos de Zafra chose as the title for his talk, "The Progress of Aeronautics." The lectures were well illustrated with both lantern slides and moving pictures.

The Aeronautical Society of Women meets twice monthly. One of the meetings is a more or less social affair, while the other is devoted to practical study in aviation, a practical instructor being in attendance. It is a subsidiary organization of the Aeronautical Society.

NO AERO LAWS FOR NEW YORK

ALBANY, N. Y., March 9.—By agreement between the leaders of both parties the bill introduced by Assemblyman Shlivel establishing a state license board for aviators was recommitted after having been reported out of committee. The bill is now practically dead. In the judgment of the Assembly, aviation is too young to warrant the establishing of a commission for its regulation.

"When the right time comes," said Assemblyman A. E. Smith, "we will probably be passing bills forbidding aviators to tie their machines to church steeples during the hours of worship, but at present aviators need life insurance, not licenses."

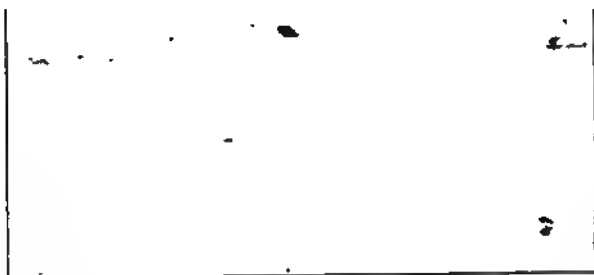


Testing the Factor of Safety of a School Machine

SECOND JUMP MADE FROM AEROPLANE

St. Louis, March 11.—Albert Berry, the first man to make a parachute jump from an aeroplane, narrowly escaped a fatal fall when he leaped from a Roberts-motored Benoist biplane piloted by Antony Jannus at Kinloch Field yesterday afternoon. For a second disastrous results appeared imminent. The parachute, for an instant, was nearer the ground than the jumper and he seemed to be in danger of falling into its folds and preventing its opening.

Of 1,000 persons at the field, few realized this hazard, but experts who watched the parachute cut loose, realized the danger, and a veteran parachute jumper believed for a moment a fatality was certain. The southeast wind and the propeller draft, both blowing in the same direction, are believed to have been responsible for the dangerous effect, as the aeroplane was headed into a stiff gust of wind at the time Berry cut loose.



JANNUS AMUSING THE MOTION PICTURE OPERATOR.

Berry had been sitting on the crossbar of the machine, which is a part of the running gear, for about five minutes before he jumped. He waited until the aeroplane was over the central portion of the field and at a height of more than 700 feet, before he decided to make the leap.

After the first hazardous position of the parachute, it swung rapidly into the proper place for a safe drop, opening fully when about 150 feet from the aeroplane. It filled quickly and the air, passing through the hole in the top, brought it down at fairly slow speed.

The landing was made about 400 feet from the western boundary of the field, Berry pulling on the front ropes to keep the umbrella-like structure of cambric level in the air. When his friends and the spectators on the field ran up to him he was smiling joyfully, but he had suffered so much from the cold wind that parts of his face were blue.

The aeroplane had been in the air 11 minutes before the jump was made. Several wide circles of the vicinity were made, in an effort to gain an altitude of 1,000 or 2,000 feet. The gusty wind kept Jannus busy with the stabilizing levers and the head-resistance of the parachute jumper and the big metal bell containing the parachute made fast climbing difficult.

Jannus and Berry suffered greatly from the penetrating

cold, and the effort to attain greater altitude as a precaution was abandoned because Berry could not safely endure holding onto the running gear much longer.

When Berry had leaped from the machine, grasping the trapeze of the parachute, and it unfurled from the bell or container, there was a shower of pieces of paper that had been placed around the cloth and cordage to prevent entanglement.

After the leap Berry said he would not make another, because of the danger he had been in on the second trial, but he afterward admitted he would if there was sufficient opportunity for making money out of it. His receipts for the dangerous work so far have not been large.

WRIGHTS WATCH COFFYN IN HYDRO

New York, March 9.—Wilbur and Orville Wright were interested spectators of Frank Coffyn's hydroaeroplane flights off the Battery on Thursday. It was said that it was the first time the Dayton inventors had seen their machine in its new capacity as a water craft.

Wilbur Wright commented somewhat dubiously on the roughness of the water as he watched the aviator standing on the raft beside his machine, while the waves at times submerged his feet. He expressed approval, however, when the biplane, released, darted upon the water, skimmed along the surface a short distance and rose easily into the air. Then Coffyn flew out to Liberty Statue and back, across to the Jersey shore and over to Governor's island and return. Three times he alighted on the water and ascended without hesitation again before landing.

Coffyn has been doing a splendid missionary work with his hydro, and it is believed that as a result of his demonstrations right in the heart of the city, several down-town New Yorkers have decided to take up the sport this summer.

Coffyn gave the harbor some more thrills yesterday. At the end of one trip, when the aviator was flying low, there was a gasp of apprehension when the "hydro" was seen arriving in a bee-line for a freight car float. The captain of the tug which had the float in tow blew several short whistle blasts. The aviator pulled his left lever and hurdled neatly over the cars. Later in the afternoon Coffyn, in turn, took up his wife and seven-year-old son.

BREAKS WOOD AT AUGUSTA SCHOOL

AUGUSTA, GA., March 3.—Lieut. F. M. Kennedy, who was injured in an aeroplane accident about two weeks ago, has now recovered sufficiently to be removed from the city hospital to his home yesterday afternoon.

The fast Curtiss aeroplane was rebuilt after the accident of February 4, parts were received and assembly completed March 1. The next day Captain Beck was flying it, and while at an altitude of about 300 feet the engine stopped. In descending to make a landing, the machine grazed the top of a tree, which changed its course somewhat and it struck the ground at an angle, breaking the chassis and lower part of the aeroplane. Captain Beck was not injured.

Lieut. L. W. Hazelhurst, Jr., reported for duty March 1 and the next day began learning to fly the Wright. Lieut. Milling has been assigned as his instructor.

Rain prevented flying for two days of last week. Twenty-one flights were made, having a total duration of three hours and 28 minutes.

REMINGTON BUYS MORE MACHINES

New York, March 9.—Earle Remington, the popular amateur aviator of Los Angeles, has been in New York purchasing additional aeroplanes. Remington became interested in aviation while watching Hoxsey fly a few days before he was killed. Remington bought a Bleriot from James Radley, the English aviator. Since then the young sportsman has acquired two more Bleriot and two biplanes. As a result of his visit to the east, his collection of machines has been increased by a Wright and a Burgess-Wright hydro-aeroplane.

Takes Propeller Agency.—Harry B. Wise, of the Sloane Aeroplane Company, who is now on his way east, closed a contract with the Sunset Aviation Company, while he was on the Pacific coast, giving that company the agency for Charvary propellers in California, Washington and Oregon.

FOREIGN NOTES

London to Paris in Record Flight.—Henri Salmét, one of the pilots attached to the Bleriot aeroplane school at Hendon, near London, Eng., left Hendon at eight o'clock on the morning of March 14 in his Bleriot monoplane and arrived at Issy-les-Moulineaux, near Paris, France, at 11 a. m., having covered the distance of 222 miles between the two cities in two hours and 57 minutes. In an interview he stated that having important business in Paris, he decided to go by aeroplane owing to the unsettled condition of the railroad and steamship lines from labor trouble. Having completed his business, Salmét started on the return journey at 2:15 p. m. of the same day, but on account of stormy weather landed at Berck, on the coast of France, at 6 p. m., deciding that it was too late to cross the English Channel that night.

Short Bros. Build Monoplane.—The well-known English aeroplane builders, Short Brothers, have constructed a monoplane on the lines of the Bleriot, which was tested out the first time on February 24. That it flew satisfactorily at the first attempt, and needed no subsequent adjustments, shows that aeroplane designing and building is now an exact science.

Germany Training Many Officers as Aviators.—The 60 officers who are being trained at Johannisthal are rapidly qualifying for their pilots' licenses and will shortly be transferred to Doeberitz to receive special instruction in military aviation. On May 1 an additional lot of 60 officers will be sent to Johannisthal for training. The German War Office is placing orders for machines to keep these aviators employed, the Rumpler firm having just delivered 15 machines, with a further order of 15 to be delivered on March 15. It is expected that the German Army estimates will include \$500,000 for the purchase of military aeroplanes. Aeroplane stations are to be formed at Metz, Cologne and Strasburg.

Public Subscription for Planes in France.—Headed by the gift of \$20,000 from M. Michelin, and \$10,000 from each of five French newspapers, the national subscription for purchasing aeroplanes for the French Army is rapidly approaching the \$100,000 mark. At the beginning of March the total was something more than \$80,000.

Grahame-White to Build British Challenger.—Grahame-White has signified his desire to uphold the prestige of Great Britain in the forthcoming Gordon-Bennett cup race. For this race he will probably fly a machine of his own construction, modeled along the lines of the Nieuport monoplane, and equipped with a 100-horsepower Gnome.

Vedrine's Speed Records.—At Pau, France, on February 22, Vedrine, driving the Deperdussin racer, broke the world's speed records up to 200 kilometers, as reported in *AERO*. The official figures show that for one circuit of the course he traveled at the rate of 105 1-5 miles per hour.

A Sporting Aeroplane Race.—As an aftermath of the keen competition between the Sommer pilot, Bathiat, and Vedrine, of the Deperdussin firm, Roger Sommer has issued a challenge to the Deperdussin firm, which has been accepted by them. This is in response to the current rumors that Bathiat was using "doped" gasoline when he made his recent records. The terms of the challenge call for a speed race over a course of 50 kilometers (31 miles) with a 70-horsepower Gnome motor, using pure gasoline. The stakes are said to be \$1,000.

A Monument to a Pioneer.—At Cairo, Egypt, February 13, a monument was unveiled to the memory of L. P. Mouillart, one of the pioneers in experimental flight with a glider. He is supposed to be the first man to use a system of wing-warping for lateral balance, one of his original gliders, built about 1870, is still preserved. He died in 1897.

American Gets a French License.—At the civilian school of the Bleriot company, at Pau, France, on February 24, A. C. Menges made the necessary three flights for his license in fine style.

A New Hirth Monoplane.—On February 21, a new machine made its appearance on the Johannisthal aerodrome and created considerable interest. It is of the monoplane type and is fitted with two propellers, one at the leading edge of the plane and another at the trailing edge, each driven by a separate 100-horsepower motor. Great speed is expected.

Italy to Have Large Fleet.—The Italian Minister of War, General Spingardi, has asked the Italian Parliament to provide funds for the formation of an aerial fleet of 300 aeroplanes and 24 dirigibles. Schools are to be started to train the necessary pilots. At the present time the Italian Army possesses 50 aeroplanes and nine dirigibles.

The New Zeppelin Cruiser.—Speed trials were carried out at Friedrichshafen, February 17, with the new cruiser Zeppelin 12. The speed reported was 45 miles per hour. The Schwaben was also tested for speed and reached slightly under 44 miles per hour.

A Dirigible at Tripoli.—A first ascent was made by the dirigible P. 1. from Tripoli, on February 14, and as on the previous day a supply of 20,000 aerial bombs had arrived, it was intended to set to work at once to distribute some of these among the enemy.

Balloon Without Net Carries Four.—On March 9, at Berlin, Germany, Dr. Elias, a German aeronaut, made an ascent with three passengers in a new type of balloon. The usual net covering the balloon and from which the car is suspended, is not used, its place being taken by a cloth girdle completely surrounding the balloon, and strongly attached to it. The trip was in every way successful.

Crossing the Atlantic by Aeroplane.—A. E. Berriman, the English aeronautical authority, has calculated that before the Atlantic Ocean can be crossed in one continuous flight, it is necessary to have an aeroplane capable of carrying a useful load of about 1,500 pounds, and be able to travel at 60 miles per hour continuously. The shortest distance between the two coasts is 1,700 miles.

Girl Aviator Falls.—According to cable dispatches, on March 10, at Etampes, France, Suzanne Bernard, who was qualifying for her pilot's license on a Farman biplane, fell from a height of 180 feet and was crushed to death.

FROM THE COMPASS POINTS

Dirigible Breaks Moorings.—The Murray Airship Company's big dirigible airship combination broke from its moorings at Ingleside, Cal., last week. The envelope was ripped and some of the mechanism damaged, but it is understood that prompt repairs will make it possible to test the craft within a few weeks.

Wants Inter-City Race in Missouri.—J. C. Allen, of the International Aviation Company, of Boston, has been in Joplin, Mo., recently, endeavoring to arrange a match race from Springfield, Mo. to Joplin.

Wireless Telephone Experiments.—H. E. Morin, chief electrician, United States Navy, has conducted successful experiments in sending and receiving with a wireless telephone apparatus from an aeroplane in midair. The tests will be renewed March 22. Morin does not use dangling wire antennae, but the guy wires of the aeroplane instead.

New Hydro Factory.—The Hydroaerocraft Corporation, of Chicago, has leased quarters on Belmont avenue, where the construction of speed hydroaeroplanes has begun.

COLLEGE MEN WILL CONVENE

New York, March 19.—The Intercollegiate Aeronautical Association will hold its convention here April 12 and 13. Delegates are expected from all parts of the United States, as well as from Canada and Mexico. A schedule of meets will be arranged in which the universities will compete, with both aeroplanes and balloons. George Atwell Richardson, of the University of Pennsylvania, is president of the organization.

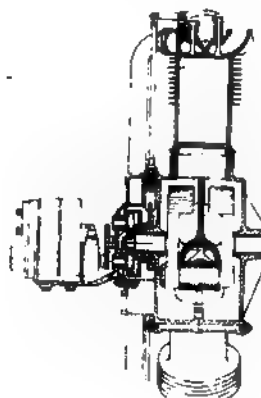
Wind Makes Flying Hangars at Los Angeles

The recent high wind experienced in Los Angeles raised havoc with some of the partially completed hangars at the new Griffith aviation field, and one building, that of Jay Gage was lifted from its foundation and carried over 50 feet by the wind. The machines which the structure sheltered were uninjured. In a letter to *AERO*, Gage comments on his experience as follows: "I knew that I could make an aeroplane that would fly, but I never dreamed that I could go one better and make a darned hangar that would fly too. However, I am starting in again and will be in operation in a short time."

1912 ANZANIS SHOW MANY REFINEMENTS

The name of Anzani is inseparably connected with the history of aviation. It was with one of his air-cooled motors that Bleriot made the first crossing of the English Channel in July, 1909. This historic flight gave prominence to the pro-

the Type Militaire and is rated at 30-35-horsepower. That this is a moderate rating for the motor is shown by a recent brake test when the motor developed 44-horsepower at 1,575 revolutions per minute.



CROSS SECTION OF 6-CYLINDER ANZANI.

As the illustration shows, this motor is of the three-cylinder radial type; the cylinders are set at an angle of 72 degrees with one another. The inlet valves are automatic, while the exhaust is mechanical. The exhaust is assisted by the use of a series of holes in the cylinder wall which are opened by the movement of the piston. This greatly reduces the temperature to which the exhaust valve proper is subjected.

The arrangement of the inlet piping is quite original; the crankcase is provided with an extension which forms a

3-CYLINDER Y TYPE IN DEPERDUSSIN MONOPLANE

duct of the Anzani factory, which place, by right of perfection in material, workmanship and performance, it has maintained up to the present.

The 1911-1912 models are made in four types, type A being

THREE-CYLINDER ANZANI "TYPE MILITAIRE."

very similar to the original used by Bleriot, with such refinements as the use and abuse of the motors during the last two years have shown to be practical. Type A is known as

BACK VIEW OF TYPE C.

chamber to which the carburetor is attached at the bottom. From this annular chamber, which is of aluminum, the intake pipes leading to each cylinder are placed, each directly behind the cylinder that it serves. This arrangement of the intake piping has several advantages. First, there is no liability for one cylinder to starve another. Second, the inlet of fresh cool mixture cools the crank chamber, and conversely both the carburetor and the explosive mixture are kept reasonably warm, a matter which is of great importance. Final-

ly, the low position of the carbureter makes it easy to insure a constant supply of gasoline to the motor when the tank is placed at the same level as the motor. The bore of this type is $4\frac{1}{4}$ inches with a stroke of $5\frac{1}{2}$ inches.

Type B is of the three-cylinder Y design, the cylinders being set at an angle of 120 degrees with one another; they fire even intervals of 240 degrees, and the torque is therefore the very best possible for a three-cylinder four-cycle motor. The crankshaft has a single throw, one of the big ends being a master to which the others are articulated in a patented manner.

There are no flywheels, either internally or externally, and the crankshaft turns on ball bearings. The valves are arranged the same as in Type A with the exception that the motor can be supplied with mechanical intake valves if desired. The ignition is by special Bosch magneto. The bore and stroke are the same as Type A. The weight of Type A is 156 pounds and that of Type B, 121 pounds. The thrust of

TYPE D, 100-HORSEPOWER, 14-CYLINDER.

Type A when fitted with a suitable propeller for the single passenger Bleriot or Deperdussin monoplane is from 240 to 275 pounds, with a fuel consumption of about $2\frac{1}{2}$ gallons of gasoline and three pints of lubricating oil per hour. The power of the Type B is about 10 per cent greater than that of Type A, with a corresponding increase in the thrust. The cylinders of Type B are considerably offset from the crankshaft.

The radial six-cylinder Type C is made in two sizes, 60 and 80-horsepower, the dimensions being respectively $4\frac{1}{4}$ inch bore by 4 15-16 inches stroke and $4\frac{1}{2}$ inch bore by $5\frac{1}{2}$ inch stroke. The general arrangement of this motor is the same as Type B, except that the cylinders are not offset. It has mechanical lubrication and automatic intake valves. The weight of the 60-horsepower motor is 190 pounds and that of the 80-horsepower 253 pounds. Type D is of the radial type and has 14 cylinders arranged as shown. The bore is 3 9-16 inches by $4\frac{3}{4}$ inch stroke. It is rated at 100-horsepower and weighs 330 pounds.

CORRESPONDENCE

[1074] D. M. V., Fort Wayne, Ind.—The following companies build and sell dirigible balloons: Zodiac Company, 15 route du Harve, Puteaux, France; Societe Astra, Billancourt, (Seine) France; Clement-Bayard Company, Paris, France, and the Goodyear Company, Akron, Ohio.

[1075] F. P. A., Miles City, Mont.—We will shortly publish an article on how to build a man-carrying glider of the biplane type. More success has been attained with biplane gliders than with those of the monoplane type. The biplane glider is easier to build and transport.

[1076] W. H. T., Peoria, Ill.—If the weight of a properly built model does not exceed 16 to 18 pounds, a model motor which will develop about $\frac{1}{2}$ horsepower will fly it.

[1077] W. D. A., Custer, Okla.—The Curtiss biplane holds several cross-country records. The standard Curtiss motor develops about 50-horsepower. This is the motor usually fitted to the Curtiss land machines. Gliding angle as applied to an aeroplane, means the distance that the machine will glide if the motor should stop when the machine is in the air. If the motor should stop at an altitude of 1,000 feet and the machine were made to glide at the least angle possible to it, the distance made in a horizontal direction divided by the elevation from which the glide was made will give the gliding angle. For the case considered, if the horizontal distance of the glide was 6,000 feet, then the gliding angle was one to six. The gliding angle of any aeroplane is determined by the head resistance and not by the area of support. The less the head resistance of any machine, the better the gliding angle will be.

[1078] H. J. H., Los Angeles, Cal.—The chord of the two-seat Deperdussin monoplane varies from 7 feet 2 inches to 6 feet 7 inches. The camber is 3 inches at the widest part of the wing and slightly less towards the tip.

[1079] F. H., Ogdensburg, N. Y.—The weight of a 20-foot spread Chanute-type glider will be about 50 pounds.

[1080] A. E. Z., Austin, Ill.—A monoplane glider with a spread of 25 feet and a chord of 5 feet 10 inches should have a camber of 4 inches and would support a 140-pound man at a speed of 20 miles per hour at an angle of six degrees.

[1081] L. H. P., Akron, Ohio.—At present there is no age limit in connection with obtaining a pilot's license. Practically, anyone over 16 years of age, if possessing the necessary nerve and strength, could attend any aviation school and obtain a pilot's license.

NOVEL BIPLANE TRIED IN GALVESTON

GALVESTON, TEXAS., March 9.—Activity of the National Aeroplane Company's school on the beach here has only been slightly retarded by an accident to the Beech biplane which occurred this week when the designer of the machine took it out for a trial. Although the machine has been successfully flown and passengers carried by J. Hector Worden, the trial made by A. C. Beech ended with the machine hung up on a tent pole. The pilot escaped without injury.

In describing the accident he said, "We turned the machine round for the return run. I had to ease her over a rough place, but as soon as I pulled up the elevator, it shot into the air 20 feet. I immediately pushed down her head to kill the motor when I noticed the rough ground and remembered the recent tipping and swooped in a spiral down onto the tent, banking up to over 60 degrees and turning completely over. On striking I was shot head first toward the ground, but managed to catch a tent cable, retain my hold, and so save myself."

The machine has since been repaired, the Breguet-type of third wheel attached and sprocket and chain substituted for rope in the steering gear. It is claimed that the tests made by Worden show that the new machine can climb 1 in 20 with a passenger on 320 pounds thrust that it can climb 1 in 5 with pilot on 370 pounds thrust, and that it has a gliding angle of one in 15 and it is said to possess much natural stability.

The biplane measures 50 feet across the upper plane, the lower being 30 feet spread. The chord is 6 foot 6 inches and the gap 7 foot 6 inches. The front elevator has 20 square feet of surface, the rear elevator 45 square feet and the two flappers eight square feet. The cross section of the main plane is of the Nieuport type without the inverse curve at

the entering edge. Lateral stability is maintained by the use of ailerons on the top plane which have the same curve as the corresponding fixed surfaces. The control is dual and a Roberts six-cylinder motor supplies the power. The machine was first tried out by Worden, who flew it for several miles on Denver Beach, carrying a passenger.

Paul Studensky, about whose over-city flight Galveston is still talking, made a short flight last Sunday, remaining in the air about 15 minutes and coming down on account of the heavy mist.

Scott Linn, secretary of the National Company has gone to Chicago where he will remain about 10 days before returning again to take charge of the work here. During his absence the school will be in charge of his cousin, Howard Linn.

The Curtiss biplane of Mart McCormack has been repaired and is now ready for use as a school machine. It looks better than it did before the accident.

SACRAMENTO FLYING CONCLUDED

SACRAMENTO, CAL., March 3.—Two large audiences aggregating 10,000 persons witnessed the best programme of exhibition flying ever shown in the Sacramento Valley, at the State Fair grounds, this afternoon and yesterday.

Blanche Scott, Phil O. Parmelee, Charles K. Hamilton, Horace Kearny, Farnum Fish and Glenn Martin, comprising a team organized by Dick Ferris from the Oakland meet, performed almost every evolution heretofore pulled off in the air. The weather was perfect and there were but two minor accidents.

Hamilton proved that he had lost none of his skill by his enforced layoff, while Parmelee with his Wright and Hall-Scott equipment, was one of the heroes of the show and his spirals and long dips brought round after round of applause. Kearny essayed a flight from Oakland to this city on Thursday, but was forced to land when about six miles away, on account of a defective magneto. He made a good landing on the tide line, but his front wheel buried itself in the mud and the machine turned a complete somersault, landing bottom up on the marsh and burying the pilot in the soft mire. He was uninjured and a crushed front elevator comprised the extent of the damage to the machine.

Farnum Fish gave some startling exhibitions of his rapid progress in the control of his machine and turned off a number of spirals in a manner worthy of some of the older Wright pilots. At the close of the programme today his foot slipped off the throttle when landing and his machine crashed into Parmelee's, both planes sustaining about \$100. worth of damage apiece.

Just before the accident Miss Scott, after giving one of her very best exhibitions, miscalculated the distance in doing an "ocean roll" and slammed her machine on the ground, breaking a propeller and several parts of the center section.

Today the aviators are preparing to disperse to various portions of the state. Hamilton is planning a campaign of California, Parmelee is planning some special cross-country work and Fish will go direct to Los Angeles, where he will establish a school. Blanche Scott and Martin are planning a tour of the United States and Canada.

PECK CIRCLES OLD CAPITOL

MONTGOMERY, ALA., March 7.—Probably the most spectacular flight that has been made during the aeroplane-automobile meet here this week is the one accomplished today by Paul Peck. He circled the old capitol of the Confederacy for the first time. Traveling at an altitude of about 2,000 feet, he flew over Montgomery in his Columbia biplane with Gyro motor, circled the dome and started back to the fair grounds. He was forced to make a landing on the return trip, but was soon in the air again, returning successfully to the grounds.

The flights of Harold Kantner in his Molsant monoplane, and of Oscar Brindley in his Wright has attracted considerable attention, Kantner climbing to an altitude of several thousand feet.

On opening day, March 4, there were five machines in the air at one time. They were the Wright of Brindley, the Columbia of Peck, the Shneider of Fred Shneider, the Wright of Louie Mitchell and Kantner's Molsant.

The attendance to date has been very good.

BURGESS FLIERS BUSY IN FLORIDA

DAYTONA BEACH, FLA., March 8.—Fine weather here during the past week has made it possible for Phillips W. Page with his Burgess to make a large number of flights on the beach and carry many prominent people who are here for the winter as passengers.

On March 2 seven flights were made. A lesson was given to R. L. Hatimer, while Miss H. Judah and Miss E. H. Shores, who are guests at the Claridon Hotel, were carried as passengers.

HOTEL CLARENDON AT SEA BREEZE, FLA., FROM PAGE'S BURGESS.

On March 3 Page continued his instruction to John F. Gray and to Hatimer. Among the passengers he carried were Miss Lucy Haverson, W. W. Monson, Miss Alma Seipp and Miss Helen Mitchell.

On March 5 Page gave lessons to his pupils of March 4 and since that time has made daily flights with them and alone.

Reports of the activity of Clifford Webster at Ormond, state that this Burgess aviator made, on March 6, four long flights out over the Halifax River in the hydroaeroplane.

EARLY BIRDS OVER LONG ISLAND

GARDEN CITY, LONG ISLAND, March 9.—The activity on the Nassau Boulevard and Mineola aviation fields this week is encouraging. This time last year it was very unusual to see an aviator out. There has been flying every day this week. At Mineola, Robert Middleton and Frank Rogers were busy early in the week practicing with the machines with which they are going to fly in South America for Peter McLaughlin. Middleton, Rodgers and McLaughlin are now on their way to Porto Rico.

Yesterday the Mineola colony welcomed Weldon B. Cooke, of Oakland, Cal., who is to join McLaughlin in South America. Cooke has crossed practically every mountain range on the coast. He flies a biplane, which he built himself and on which he learned to fly without tuition.

Gus Hofeck, a novice, did some work yesterday that caused Boland much gratification. Hofeck took out Boland's rudderless and tailless biplane, and though he had never been in the machine before succeeded in making several circuits of the field. A little later Ned Olson, who is interested in the mammoth monoplane that is being built in the old Aeronautical Society's shed, gave himself his first lesson in aviation. He used one of McLaughlin's "Red Devils" for the purpose. Olson performed some weird stunts. After making a very shaky and wobbly trip partly on the ground and partly in the air, Olson finally got above the level of the tree tops. Then he got excited, and in coming down just escaped colliding with the roof of the big hangar.

At Nassau Boulevard George W. Beatty has been up every day in his Burgess-Wright teaching his pupils, of whom he now has twelve.

On Monday Beatty, with his Frontier-engined Burgess-Wright, finished three hours' work in the air by taking Billy Ames as a passenger to the Mineola Field. While Beatty was on his way to Mineola, Rogers jumped into the air with the McLaughlin "Red Devil" and swept east to welcome the aerial visitor.

E. PERCY NOEL, Founder-Editor

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The Editor is pleased to consider MS and photographs for publication, but only material that is likely to prove of interest to the readers of Aero. The Editor cannot undertake to answer technical inquiries except in the columns of Aero.

THE NEXT STEP

Unfortunately, it is not easy for an American to understand why a manufacturer of power plants for aeroplanes should offer a prize of \$10,000 for the first flights of 33 feet in opposite directions to be made in an aeroplane without mechanical power. At first it appears that the French engine manufacturer is offering a prize to encourage inventors to injure his business.

The same cannot be said of "La Justice," which has just offered \$20,000 for the first flight without the use of a motor, for a flight of 15 miles from Paris to Versailles. On the contrary, both of these men have the same object in view. The object of each is to place a little farther ahead the lead of France over all other nations in aviation.

Such patriotism is worth noting. It is a good thing to discuss in this country, in the hope that perhaps one fine day there will be two or three Americans among the thousands who would hardly feel any financial strain as a result, who will do as much for their country. But these prizes serve to enlighten us on another more important point.

It must be remembered that back in 1908—four and one-quarter years ago—Henry Farman won a prize of \$10,000 by flying less than a mile in a motored aeroplane; for at that time the Wrights' secret flights of 1905 were not credited. The fact that \$10,000 was offered for a circular kilometer flight at that time, revives our memory. Most people can look back and remember when they heard rumors of the Wrights' 1905 flights and did not even consider them seriously enough to express their belief that it was all a "fake."

When this is recalled and we go over the long list of prizes for greater and greater achievements that have been won wonderfully soon after being offered, it is not difficult to imagine that the day of directed soaring flight is not far off.

The interest of the general public in the recent glider experiments of the Wrights is sufficient indication of what such an accomplishment would mean to the advancement of flight, for the report went around that these experiments were to test a form of glider that could be directed at will and remain indefinitely in the air.

The value of such a development is borne out more substantially by the entry of several of the oldest and best known French builders in the competition for these prizes offered in France.

Impossible although it may appear at first thought, we must know that this achievement cannot be far off, whether or not manual propulsion or another means supplements some form of motorless glider.

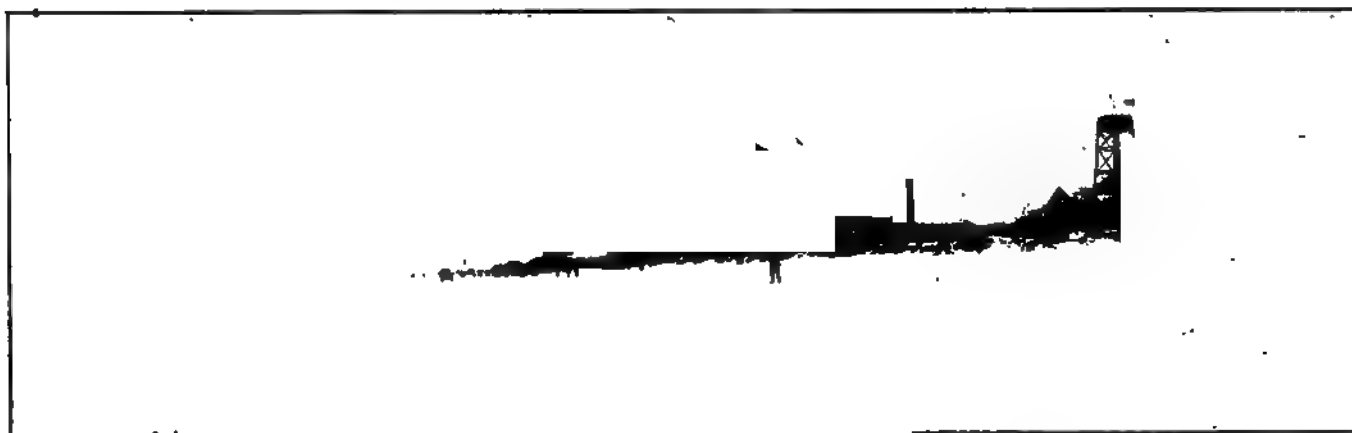
It may not come this year, but 1912 is going to be a wonderful period in the progress of flight.

Another Prize for Human Flight.—A French magazine, *La Justice*, has offered a prize of \$20,000 to the first person to make a flight from Paris to Versailles, without the aid of mechanical power. The prize of \$2,000 offered by Peugeot for a flight of 33 feet without power, has already 79 entrants, including several well-known aviators and constructors.

Four on a Borel Monoplane.—On February 18, at Lavida-mee, France, Verrept made a flight with three passengers, a total useful load of 550 pounds.

Among the Aviators

A Clean Level Sweep That Invites Low Flying



THE JOYS OF BEACH FLYING—PAGE IN THE BURGESS AT DAYTONA BEACH.

Earl Sandt, the Erie, Pa., aviator, last week visited the Curtiss factory at Hammondsport, N. Y., to get a new machine. Business men of Erie are aiding him with funds. He has received word that the letter which he carried across the lake and delivered to the lighthouse keeper at Long Point, Canadian shore, to F. R. Foster, of Fort Rowan, Ont., reached its destination.

Ladis Lewkowicz has recovered \$4,237 from the Queen Aeroplane Company for a breach of contract in a suit in the city court of New York.

C. F. Walsh, who on March 3 and 4 gave free exhibitions at Houston, Tex., under the auspices of the South Houston Land Company, may give up exhibition work soon. It is reported that he will go into business for himself at Houston.

Miss Blanche Scott has done some good work in motion picture plays, but her best acting recently has been on windy days, when, for the benefit of the newspaper men, she has insisted that her manager allow her to fly.

Hillery Beachey, who, flying with a Hall-Scott motored Heilmann-Beachey biplane on the Pacific coast, created a favorable impression, spent several days in Los Angeles on his way back to St. Louis, where he is at present.

Charles F. Willard, who is back to his first love, the Curtiss, driving a standard biplane fitted with Gnome motor, has been with G. H. Curtiss at San Diego recently.

William C. Murst, of New York, is building a hydroaeroplane which he will try out on Long Island within a week or two.

Miss Harriet Quimby sailed for Europe, March 7. While abroad she hopes to be able to compete with the noted French airwomen in a 70-horsepower Bleriot.

Edson Gallaudet, who won his pilot's license in a Wright at Nassau Boulevard last summer, has recently taken a French license flying a Nieuport at Pau. He has purchased a Nieuport and now owns three machines.

Victor Jonckheere, who will probably be one of Belgium's representatives in the International aviation cup race, is now in New York, where he just received a new Bleriot racing monoplane.

Louie Mitchell expects to start a flight from New Orleans to Minneapolis, following the Mississippi river in his hydroplaned Wright, April 1.

R. T. McAlooney, a recent graduate of the Aero Exhibition Company school at St. Augustine, Fla., visited his family in Clay Center, Kans., last week.

Mrs. Bessica Raiche, who was awarded the Aeronautical

Society's medal for being the first woman in America to fly, is in charge of a new department for women inaugurated by the Stanard School of Aviation, Chicago. Ground has been broken for two new hangars at the school field, Clearing, Ill.

Richard Nygren, who will participate in the Hot Springs, Ark., meet, March 12-14, purchased a hydroaeroplane while in Chicago recently, which he will equip with a six-cylinder Kirkham motor. It is understood that Nels J. Nelson built the hydro.

Nels J. Nelson, the Mills aviator, began practice work with a Kirkham-motored hydroaeroplane of his own construction near New Haven, Conn., last week, after previously testing the floats on a small pond in Newington, Conn. He is contemplating a flight across the Isthmus of Panama.

Diddler Masson is booked to fly an exhibition at Peoria, Ill., during the automobile and motorcycle races to be held there, May 5.

Robert G. Fowler flew at Americus, Ga., March 6, for a purse of \$500 offered by merchants there. He is said to be planning another trans-continental flight for this summer, starting from Pablo Beach, Fla., and finishing at San Francisco. W. F. Winchester, of Jacksonville, Fla., may accompany him in a second machine.

Walter Brookins has a verbal contract to carry every member of the family of Rev. Dr. Frank Landon Humphreys, of Morristown, N. J., as passengers before they leave Palm Beach, Fla., for the north. Mrs. Humphreys and her son Landon have already ridden in his Burgess hydro.

FROM THE COMPASS POINTS

Asks Plane for Marines.—The Aero Club of Pennsylvania, at its meeting on March 1, adopted resolutions recommending that the committee appointed by the mayor of Philadelphia to further the interests of the Navy Yard, be asked to use their influence with the congressmen from Philadelphia to obtain a congressional appropriation for the purchase of an aeroplane for the Advance Base School of the Marine Corps at League Island.

Akron (O.) to Have School.—Emil Gammeter will establish a school of aviation at Akron, O., at which Lester Weeks will be the instructor. The school will be opened April 1, with the Gammeter biplane.

Curtiss May Experiment with Gliders.—According to a vague report from Bayocean, Ore., H. Brown, said to be a representative of the Curtiss company, has made arrangements for an experimental station near that city to be used by G. H. Curtiss this summer for experiments with gliders.



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1,019,078, March 5, 1912.—Chas. Morgan Olmsted, Pasadena, Cal. An aerial screw-propeller comprising a hub and a plurality of rigid blades, the contours whereof substantially conform to a helicoidal surface throughout their entire extent, and the cross sections whereof are concavo-convex wherever taken between hub and tip, each blade having its widest portion adjacent to said hub, and more than twice as wide as the width of that blade at a distance from the axis equal to three-fourths of the extreme radius of the propeller.

1,019,168, March 5, 1912.—Charles L. Matson, Chicago, Ill. A flying machine comprising a main frame, an auxiliary frame arranged above the main frame and having a pivotal connection with said main frame, flexible planes supported by their extremities on said auxiliary frame, and means for flexing said planes alternately in opposite directions.

1,019,271, March 5, 1912.—Louis M. Nelson, Pennington, N. J. A collapsible parachute for flying machines comprising a receptacle designed to contain said parachute in collapsed condition, the receptacle being open at its top, a distensible cover formed with a marginal bead by which it is designed to be stretched over and removably secured to the receptacle to cover the same and the receptacle being of a size to contain the parachute in the collapsed and deflated condition of the latter, the parachute including an inflatable frame, and means leading into the receptacle for inflating said frame, whereby to forcibly remove the cover from the receptacle and to raise the parachute therefrom into distended condition.

1,019,283, March 5, 1912.—Edouard Surcouf, Billancourt, France, assignor to Societe Anonyme "Astra" Billancourt, France. In an airship the combination of two distinct propelling groups, a differential mechanism arranged between said driving mechanisms and said propelling groups, and clutches arranged between each of the driving mechanisms and said differential mechanism and each of the propelling groups, and the said differential mechanism.

1,019,368, March 5, 1912.—Robert Cooke Sayer, Redland, Bristol, England. A body for aerial navigation having a central vacuum, and having a series of adjacently disposed chambers or cells arranged along its outer periphery, each of said chambers or cells containing a gas under pressure.

1,019,418, March 5, 1912.—Jean Jacques Bourcart, Kolmar, Germany. A jointed framework for aeroplanes or flying machines, composed of four triangular members arranged with their apices meeting at a point and ninged together so that the rear member can swing, in conjunction alternately with the right and the left side member, on two axes which intersect each other at the said meeting point substantially as set forth.

1,019,437, March 5, 1912.—Clarke H. Draper, Hopedale, Mass., assignor to C. F. Roper & Co., Hopedale, Mass. A propeller

blade having generating lines for its working surface increasing incurvature from the leading to the following edge, said generating lines being tangent to radii at the periphery of the hub, the pitch being uniform at the hub.

1,019,579, March 5, 1912.—Walter Edw. Zells, Ann Arbor, Mich. A combined aeroplane and dirigible balloon including an aeroplane carrying frame comprising a skeleton frame, a motor fixedly mounted therein, said motor being provided with pivot pins, and a supporting mast pivotally connected with said pins and extended above the said motor and carrying frame to be pivotally connected with said balloon.

1,019,582, March 5, 1912.—Herman Anschutz-Kaempfe, Kiel, Germany. A gyroscope apparatus comprising a rotatable body, a spindle for said body, supporting means for carrying the said spindle in approximately a horizontal plane, a pendulum device connected to said supporting means, damping means carried in part by the supporting means in and part by the pendulum device and connected and operative to be non-counteractive to the said apparatus when the spindle is horizontal and to exert a counter-action force to the said apparatus when the spindle is shifted from the horizontal plane, thereby to effect a turning movement of the apparatus to dampen its oscillation.

1,019,635, March 5, 1912.—Frank Harlow, Boston, Mass. An adjustable propeller comprising a barrel, a pulley mounted fixedly thereupon for turning said barrel, a shaft extending axially through said barrel and through said pulley, a gear member mounted upon said shaft for turning the latter continuously, an arm provided with a bearing, said bearing being slidably mounted upon said barrel, said arm being also provided with a second bearing pivotally connected with it, a shaft extending through said last-mentioned bearing and made in separate parts connected together by a universal joint, a gear member carried by said last-mentioned bearing and made in separate parts connected together by a universal joint, a gear member carried by said last-mentioned shaft, and meshing with said first-mentioned gear member, and two propellers mounted upon one of said separate parts connected together by said universal joint.

1,019,646, March 5, 1912.—Alexander Horton, Portsmouth, England. A flying machine including a boat, supporting planes extending laterally from the upper portion of the boat, a rudder pivoted to the boat, a seat for the operator, a pair of right angle levers pivoted to the seat, the levers having one of their legs extending in the same direction and their other legs in opposite directions, a rod pivotally connecting the oppositely extending legs of the levers with the rudder whereby the rudder may be actuated by the operator leaning against the first-mentioned legs of the levers.

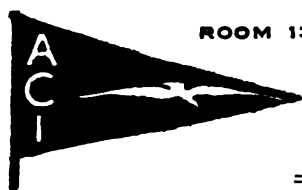
San Francisco Notes

Edward Loudenclos, of the Park Cyclery, is at work on two planes which he will try within the next two weeks. One of these is a two-propeller headless biplane having original features. The propellers are standard Wright, fuselage and tail are of Wright type, and the landing gear is Curtiss type. The planes are 36-feet spread with 4 feet 9 inches chord and are equipped with allersons of Farman design. The machine is 20 feet overall. The allersons are 5 feet by 18 inches. The three-in-one control will be used and the engine will set down back of the seat. The chains will be geared with 13 and 31 inch sprockets. The biplane will be equipped with a three-cylinder, 30-horsepower Smalley aero engine, driving propellers 8 feet in diameter with 12-foot pitch. Loudenclos will use a Mea magneto.

The other machine which is being assembled by the same builder is a monoplane with Nieuport wings and Bleriot chassis, three-in-one control and a few original features which are yet to be worked out before the craft will be ready for service.

It is the intention of the builder to install an original engine which is being perfected by the Auto Machine Company of Pasadena and which is expected to eliminate a number of undesirable features found in some of the motors now in use. The machine will have a four and one-half inch bore and three and one-quarter inch stroke. It is expected to develop 50-horsepower and weigh 100 pounds and, it is claimed, can be throttled down to 100 revolutions per minute.

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BULLETIN

To the Members of the Club:

An informal club dinner will be held at the Auditorium Hotel, Thursday of this week, March 14, at 6:30 p. m. The work of the membership campaign will be pushed with increasing vigor from this time, and as the open season advances prospective members will be more and more accessible. Remember the limit is 1,000.

It is probable that some interesting remarks will be made by President McCormick.

The club's relations with the Gordon-Bennet Cup race, the Grand Circuit endurance contest, and a 1912 International Aviation meet will be subject to more or less discussion.

Motion pictures of some recent meets will be shown with others of interest in aeronautics.

HAROLD W. ROBBINS, *Secretary*.

Popular Technical Conference

CHICAGO, March 7.—The aeroplanes of the present day were described in an original manner tonight by Wm. B. Stout and Andrew Drew at the second session of the engineering division of The Aero Club of Illinois.

Stout, who lived recently in Minneapolis and the north country, gave a monologue, the aviation experiences and opinions related thereto of one Ole Swenson. We were relieved to find he was not really limited to that vocabulary.

His pictures were very excellent as typical illustrations of all important contemporary machines, and those slides, showing the essential elements of biplane and monoplane will form part of the instructive collection The Aero Club of Illinois is preparing.

Andrew Drew, speaking of aeroplanes as they are to the aviator, gave some valuable pointers on what should be and what may not be done when one is flying.

Bion J. Arnold, chairman of the Technical Committee gave resume of the Technical Committee's work and what it was expected to accomplish in this series of conferences.

Umbrella Plane Goes Up

CHICAGO, March 11.—In what is enthusiastically affirmed to be the best flight of its career, the Romme circular-plane, at 6:00 a. m. this morning, flew several thousand feet.

Very early, before the sun rose over Lake Michigan a little company, including Romme, engineer Vought and pilot Lieut. Andre Ruel, stepped out on the snow covered field at Cicero, while the mechanicians prepared the big machine for the successful flight. It was the crucial moment in the development which has patiently been fostered at Cicero and elsewhere. At the first few whirls of the propeller it was seen that the big motor was revolving with the proper power to insure good results although there was a slight wind to be allowed for.

Swiftly the machine raced away from the start, well controlled by Ruel's steady hand, in spite of his recent accident, and as the little group of observers looked it rose easily and traveled steadily the length of the field. Throttling the power at that point the return was made with equal facility, and the great plane came down easily near the Romme hangar.

Further trips were negotiated and the machine will soon be given its public trials according to present plans.

The Mustard Plaster, which has been keeping company with other machines on Cicero field held this winter, found the cross-winds of last Friday disastrous when warming up out in the open. It ran one wing into the ground and demolished the propeller. Luckily there was no more serious or personal damage.

AEROPLANE IS STILL GREAT ATTRACTION

LOS ANGELES, CAL., March 5.—Larry Peters, who was manager for Cal Rodgers during his coast to coast flight, and now fills a similar position for the Turpin-Parmelee combination, has just closed a 10-week contract with the Venice Board of Trade for a free exhibition every Sunday, on the beach at Venice. These exhibitions, following as they do the completion of the largest aviation meet ever held here, prove that the aeroplane is still a better magnet for the attraction of the public than any free attraction that has ever been placed before it.

At first the Board of Trade was dubious as to how the people of Los Angeles would take to exhibitions of a single plane directly after they had been given an opportunity to witness a meet in which the stars of the country competed, but made arrangements with Howard Gill to give a Sunday afternoon exhibition of the Burgess Hydroplane. After Gill's accident, during the meet, he turned the engagement over to Turpin and Parmelee.

Although the street car company provided extra equipment and carried more than 30,000 to the beach, every car arriving packed to the doors, it was impossible to take care of all that tried to reach the beach to see the flights the first Sunday. This was repeated again the next Sunday, after which the contract for \$5,000 for flights on 10 Sundays, was made.

SWISS ENTER AVIATION CUP RACE

NEW YORK, March 9.—Switzerland was the last nation to file its entry for the 1912 Gordon Bennett aviation cup race. The Swiss entry was a surprise. Edmond Audemars, the ex-flier of the Demoiselle, who for a year has been flying a Bleriot for Moisant, will represent Switzerland, in all probability.

Six countries will take part in this year's race. Switzerland will have one representative; France, three; Belgium, three; England, two; Holland, one; and the United States, three. There is a possibility that Germany, Austria and Russia have mailed their entries, and that they will be received here in a day or two. Challenges mailed on or before March 1 may be accepted.

Gustav Hamel will be one of Great Britain's team. Hamel was the first British aerial postman, having carried the mail in his monoplane from Hendon to Windsor on July 22 in connection with the coronation. He took part in last year's contest in England in a 100-horsepower Gnome-Bleriot, but fell at the first pylon. In order to increase the speed of his machine Hamel allowed Louis Bleriot to clip the ends of his wings, and the accident resulted from his being unaccustomed to the behavior of the monoplane under the new conditions.

TO CARRY MOTION CAMERA AROUND MOUNT

SAN RAFAEL, CAL., March 6.—Didier Masson has completed his military biplane which he has been constructing for the past month and expects to test it out on Sunday on the school field. Masson has already contracted with a moving picture firm to carry an operator in a tour of Mount Tamalpais and hopes to make a record in this kind of work.

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Individuals wishing to join and clubs desiring to affiliate with the Aviation Association of America are requested to communicate at once with the Temporary Chairman. There are no dues. The object of the Association is to encourage and regulate model and kite flying and gliding in America. Each member properly qualified will be furnished with the lapel emblem of the club. Notices of meetings of affiliated clubs will be published in this column.

Model Aeroplanes

Philadelphia Boys' Meet.—Although the park guards interrupted the flying before the close of the contest of the Y. M. C. A. Boys' Aero Club at the Belmont plateau, Philadelphia, March 3, flights were made, after which the contest was continued on the Central Manual Training field without judges or officials. Consequently, the meet developed into an outing, and no records of time or distance were taken. Percy Pierce flew one of his monoplanes for a distance of about 200 yards. The meet was postponed to March 9.

Lectures to Boys' Club.—J. C. Ferris lectured to the Philadelphia Y. M. C. A. Boys' Aero Club at the association hall, Central Branch, on March 7. To illustrate his talk he used a number of flying and non-flying models.

Portland (Ore.) Meet.—George L. Batchelder, of Hood River, Ore., won the distance event in the Meier & Frank third annual aviation contest at Portland, Ore., February 24. His machine flew 631 feet. Flights were made from the top of a 10-story building, and the distances measured horizontally. There were nearly 200 entries, the grand prize being \$30 cash. Albert Haehlen won first prize, \$10; Chester Woodruff, \$5; in the other events, Daniel Drecco, Truman Cook and Clyde Ohlson were the winners.

Chicago Meet Held.—The glider division of the Aero Club of Illinois met at the club room of the Auditorium Hotel, Chicago, March 12, for the discussion of the prospects for experimental work with gliders this spring and summer. William Avery described his work with Octave Chanute, while Herbert H. Frey told of the experimental work in the south.

St. Louis Club Organized.—The second meeting of a tentative organization for a model, kite and glider club in St. Louis resulted in the organization of the St. Louis Model Aero Club, March 8. Waldo G. Clegg was elected president and William Burd secretary, both to serve until April 15, when there will be another election of officers. The next meeting of the club will be held March 15, at the Cabanne Branch Library, Union avenue and Suburban.



BOSTON CLUB'S DINNER WELL ATTENDED

Boston, March 6.—Delightful stories of journeys into and above the clouds made the after-dinner programme of the Aero Club of New England of interest out of the ordinary at the celebration by the club of its first ladies' night, held last night at Hotel Somerset. An informal reception first took place, giving the members and guests opportunity to meet Mrs. Mabel Loomis Todd of Amherst, wife of Professor David Todd of Amherst College, and Mrs. H. Helm Clayton, who were the chief after-dinner speakers; also Lieutenant Governor Robert Luce, one of the guests of honor. Professor Todd was among the guests, and Mr. Clayton, who is a club member, also was among those present. An orchestra furnished music during the reception and dinner.

The president of the club, Jay B. Benton, presided and in his

brief address of welcome, at the close of the dinner, he said that this first ladies' night was the inauguration of a custom to be continued each year. He introduced as the first speaker Lieutenant Governor Luce, who discussed the progress of the propeller as a means of propulsion. He dwelt upon the difficulties encountered by John Ericsson in bringing his invention before the public and then followed its career to its adoption for heavier-than-air machines.

The lieutenant governor, at the conclusion of his address, presented Earle L. Ovington, the aviator, an engrossed life membership certificate, done on parchment. Ovington and Harry N. Atwood were elected to honorary life membership in the Aero Club of New England on February 19, in recognition of their achievements.

Ovington in briefly acknowledging the honor given him said that notwithstanding that he was not born in Massachusetts, he now considered himself a full-fledged Bay State man. He also said the practicability of the hydroaeroplane will be more or less responsible for the development of the aeroplane. Mr. Atwood, who arrived late, as he had been flying all day, was presented with his certificate by President Benton.

The principal entertainers, however, were Mrs. Todd and Mrs. Clayton. Mrs. Todd told of two balloon ascensions which she had made, one by daylight and another by night, each time accompanied by her husband and Charles J. Glidden, who acted as pilot. Her graphic description of the sensations experienced and of the awe-inspiring beauty of the upper space, with its restful quiet, which she particularly emphasized, made those of her hearers who never have made an ascent have a strong desire and courage to do so. She spoke quite informally and with deep interest throughout her description of her two trips. The night trip was taken to make observation of Halley's comet, and she described the vigil in the basket, sometimes at a height of 7,000 feet, and the sensation she experienced when a bullet whizzed by her head, fired by some unthinking farmer near Manchester, Conn. Stereopticon illustrations of the preparations for the journeys and the events which marked them added greatly to the value of the account.

Mrs. Clayton was equally interesting in her story of her only voyage in a balloon. Her ascension was made from North Adams and her journey took the aeronauts over the Deerfield Valley, which she described, as viewed from high in the air. Both speakers told of the inspiring effect of a balloon trip.

A feature of the evening was the singing of Miss Elise Gagneau of the Boston Opera Company, of an aria from Meyerbeer's opera, "Le Phosphore," and an aria from "Mignon," to which she added the song, "Mavourneen." She played her own accompaniments for the last two selections. Her singing gave great pleasure.

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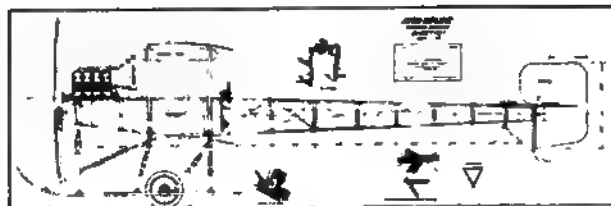
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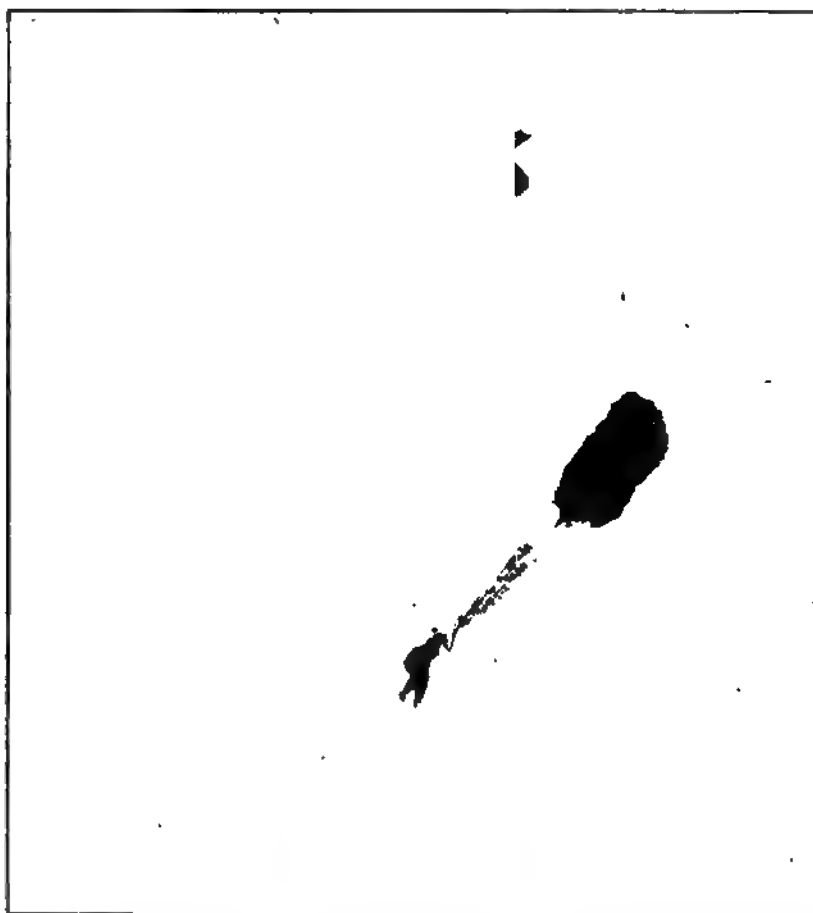
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March 23, 1912

TEN CENTS

Vol. III No. 25

**FROM AN ARMY WRIGHT--View of Tent Hangars at U. S. Signal Corps Aviation School,
Augusta, Ga.**

Some Features of the Spring Special

To be Dated April 6th

Advertising Pages Close March 29th

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WORLD'S and NATIONAL RECORDS—The existing records of aviation and aerostation, not only of the world, but also of each nation, showing the comparative progress of each.

Edited by E. PERCY NOEL

AVIATION CUP RACE WILL BE HELD AT CHICAGO

That the international race for the Gordon-Bennett aviation cup will be held near Chicago, some time between August 15 and 31, will probably be announced in New York soon. Definite selection of the site for the five-kilometer race course will be made before April 1, but there is little doubt that the course will be in the neighborhood of Winnetka and Glencoe, Ill., about 21 miles from Chicago, on the Chicago and North-western railroad.

After inspecting this location and another suggested site at Maywood, last Saturday, James A. Blair, Jr., and W. Redmond Cross, of the cup defense committee of the Aero Club of America, agreed that the Winnetka site afforded the ideal place for the race as far as could be seen with the ground under a heavy blanket of snow, and that there was not the shadow of a doubt that the Aero Club of Illinois would be in charge of the preparations for the blue ribbon event of international aviation. The board of directors of the Illinois club, on the same day, formally proposed to make all necessary arrangements for the race.

Harold F. McCormick, James S. Stephens, James E. Piew, Sydney V. James, Harold W. Robbins, E. Percy Noel and the Aero Club of America committeemen made up the party of inspection which spent all of Saturday in studying the possibilities of three locations suggested. Maywood was visited in the morning and Winnetka in the afternoon. The tract at the latter place awoke the admiration of the entire party, although the Maywood location could be satisfactorily utilized if necessary.

The Winnetka location provides a clear field approximately two miles in length and one-half mile in width, which can be cleared of even the slightest obstruction. It will be possible, on this tract, to lay out a course of five kilometers that will not run near any houses or wires and be safer than any course ever provided for the international event, except that used on the military parade grounds at Rheims, France.

It is not planned to hold the international aviation meet, but only the cup race itself on this course, admission to the latter being free. The meet will probably be held at Cicero field, where a one and one-half mile course can be obtained.

Although no definite plans have been laid, there is little doubt that an inter-city race will be started from and finished at Chicago soon after the international cup race. The tentative plan is to have this race start and finish at Grant Park, on the lake front, where the wonderful meet of last year was held.

The international cup race is this year probably destined to mark the climax of the competition for the Gordon-Bennett cup. If all of the entrants take part there will be 11 con-

testants. The entries are, United States, three; France, three; England, two; Belgium, Holland and Switzerland, one each. It is bound to be a sporting event, financed chiefly by manufacturers of aeroplanes, as James Gordon-Bennett is not offering a cash prize this year and the Aero Club of America has not yet offered one, nor indicated that it would do so.

Few of the representatives have been named, but England, if her fliers compete, will be represented by Gustav Hamel (Bleriot) and Claude Grahame-White (monoplane of his own design). Henry Wynnmalen (Max Oerby monoplane) will be Holland's representative. Switzerland will be represented by Edmond Audemars.

The Aero Club of America has raised a fund of \$40,000, it is reported, to bring Charles Terres Weymann and a Nieuport monoplane with a guaranteed speed of more than 100 miles an hour, to Chicago for the race. Weymann won the race for America last year at Eastchurch.

An effort is being made in Chicago to raise a fund for the building of a cup defender. The spur of enthusiasm in this matter is the desire to construct an American-made machine which shall at least defeat the French-made machine which the Aero Club of America will provide for Weymann. It is believed by those interested in the matter that such a victory would be worth a great deal to the United States.

Asked if there would be an elimination race to pick two additional members of the American team, Blair said: "Yes, we will hold an elimination race if there are any contestants to eliminate." It is argued that if a syndicate, properly financed, could be organized to put two American-made monoplanes in the cup race that would travel about 110 miles an hour in closed circuit, the great future of the manufacturing company would be assured.

RUSSIA BUYS CURTISS HYDROS

New York, March 16.—An order has been received by the Curtiss Aeroplane Company, for three hydroaeroplanes and one extra 75-horsepower motor for the Russian Navy. The order was cabled from Paris by Jerome Fanciulli, vice-president of the company. The three machines just ordered are in addition to one already sold to the Russian Aerial League.

Two of the machines to be sent to Russia will be of the large type, and one of the smaller type, but all will be equipped with 75-horsepower Curtiss motors, and will have the Curtiss dual control. The first of these machines will leave New York on March 20 by the French line, and will go direct to Monaco, where it will be demonstrated before the Russian Naval Commission by Hugh Robinson.

TEN WILL COMPETE IN NATIONAL CHAMPIONSHIP BALLOON RACE

Although formal entries have not yet been made, statements made to Aéro indicate that there will be at least 10 balloons to start in the national championship balloon race under the auspices of the Aero Club of Kansas City, the latter part of June or July. The date will be fixed by the Kansas City club this week.

The successful contestants in this race will be considered as candidates for the team of three that may represent the United States in the international balloon race from Stuttgart, October 27, under the auspices of the Wurttemberg Aero Club. Any of the winners in the national race who will agree to go to Germany will be nominated on the American team.

The Wurttemberg club has offered the following prizes for the international race: First prize, \$2,000; second prize, \$1,675; third prize, \$1,325; fourth prize, \$1,000; fifth prize, \$750; sixth prize, \$500; seventh prize, \$250. In addition to this, several special prizes may be offered and each pilot competing will receive a silver souvenir medal and his aide a bronze medal.

The balloons will be transported from the German frontier to Stuttgart and insured while in Germany by the Wurttemberg club. The balloons will also be insured against fire and theft while at Stuttgart. Free gas and labor for filling and

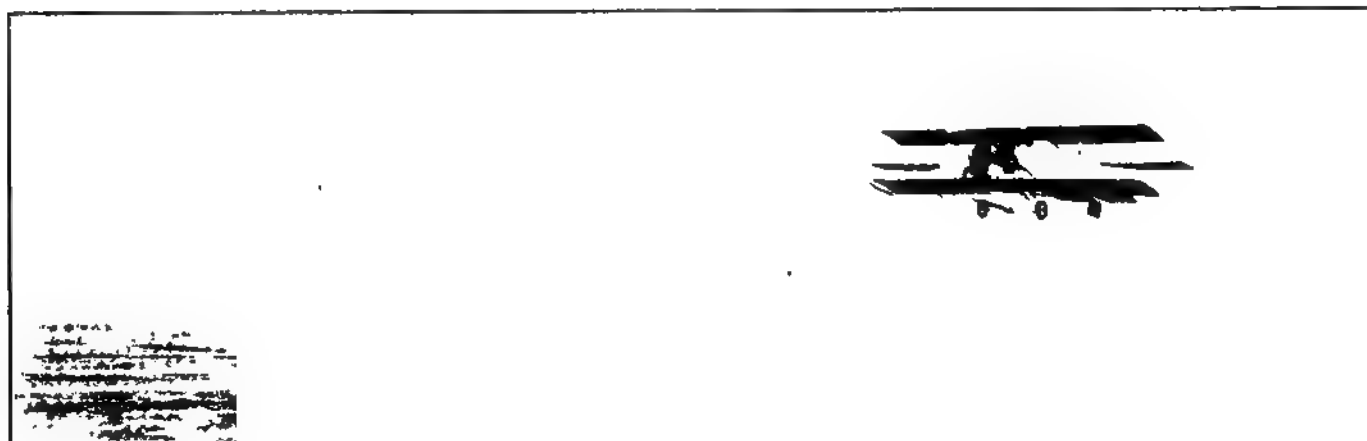
handling the balloons will be furnished by the club, and each pilot will have an interpreter at his service during the stay at Stuttgart. The club will give banquets, receptions, luncheons and provide various kinds of entertainment for all the visiting pilots and aides.

The tentative entry list for the national race from Kansas City is as follows:

Balloon.	Club.	Pilot.	Aide.
Viking.	St. Louis.	John Berry.	AvonHoffman.
Mill. Pop.	St. Louis.	P. McCullough.	Lieut. J. Hart.
Buckeye.	Cleveland.	J. H. Wade, Jr.	A. H. Morgan.
New York II.	America.	C. B. Harmon.	A. Post.
Salt Lake.	Salt Lake.	Robt. Campbell.	Not named.
Topeka I.	Topeka.	Frank Jacobs.	Not named.
Topeka II.	Topeka.	Not named.	Not named.
Kansas City I.	Kansas City.	E. S. Cole.	Not named.
Overland Park.	Kansas City.	Not named.	Not named.

The race is open to balloons of from 31,818 to 77,692 feet capacity. The entrance fee is \$100, which will be refunded in case the entrant is not selected for the American team. Entries will close four days before the race. The Kansas City club offers a handsome silver trophy as a special prize and to each balloon entered allows \$100 for expenses and gives free gas.

Recent Event at the National Aeroplane Company's School



STUDENSKY STARTING OVER-CITY FLIGHT FROM GALVESTON FIELD.

GRESSIER WILL OPEN SCHOOL

NEW YORK, March 16.—The Gressier aviators, whose temporary workshops are at 137 West 37th street, New York City, will conduct an aviation school on Long Island the coming season, and hope to be able to find a location in time to open on April 1. If they are unsuccessful in finding a private aerodrome, they will probably make their headquarters at Nassau Boulevard. It is the intention of P. P. Gressier to make a specialty of hydroaeroplaning.

In a couple of weeks Gressier will have finished a hydrobiplane of the tail-foremost type. The planes are 32 feet by 5½ feet, and the machine 25 feet over all. Lateral balance is by means of Farman-type ailerons. The monoplane-type tail includes a lifting surface and movable planes, as in the Benoist. The vertical rudder is fixed high, as in the case of the Nieuport. The rudder is worked by a pedal arrangement, and the other controls by means of a wheel. All control wires are doubled. There are three pontoons. The two under the main planes are 12 feet by 2 feet by 12 inches, while that under the tail is 3 feet by 1½ feet by 12 inches. The machine is fitted with wheels that can be raised, lowered and locked from the pilot's seat. The Gressier "Canard" is

a two-seater. It has a 50-horsepower Gnome and an 8 foot 4 inch propeller.

The Gressiers also have a 50-horsepower Gnome-Morane, a 60-80-horsepower Anzani-Farman-Curtiss, a 40-horsepower Anzani-Farman-type, and two Bleriot, one of which is the machine in which Count de Lesseps crossed the English Channel.

R. P. Gressier, who is a licensed French pilot, purposes to teach the operation of the biplane for \$300, and the monoplane for \$400. A course in both types will cost \$450. A deposit of \$300 will have to be made to cover possible damages. Every pupil will be guaranteed a license.

ADVOCATES AERO NAVAL DIVISION

NEW YORK, March 16.—In an address before the Aeronautical Society, on Thursday, Capt. Washington Irving Chambers, U. S. N., who is in charge of the United States Naval Aviation Bureau, strongly advocated the establishment of aviation divisions in the naval as well as the army militia. He spoke enthusiastically about the plan adopted by the society to aid the militia bodies of both arms of the service to secure machines and tuition.

AROUSING THE NATION TO NECESSITY FOR ACTION

By J. W. MITCHELL.

WASHINGTON, March 17.—What is hampering aviation in the American Army is not the lack of money or machines, but the lack of men. This is serious, and there is no immediate prospect of a remedy. There has been a great deal printed in the lay press as to the need of developing aviation in the army, but most of it is written in blissful ignorance of the fact that we now have more aeroplanes than we have men to detail to them.

The army now has a total of eight machines, and it has four men to handle them, one of these still untrained. All of the flying squad were sent to winter at Augusta, Ga. There were six men. There was Capt. Chas. de Forest Chandler, in charge of the detachment. He knew how to fly. The other men handling the machines were Capt. Paul Beck, Lieut. H. H. Arnold, Lieut. Thos. de W. Milling, Lieut. R. C. Kirtland, Lieut. Frank Kennedy. Of these only one, Capt. Chandler, belonged to the Signal Corps, which is supposed to have control of aviation. The others were begged and borrowed almost with tears, from the line and from other details. Capt. Beck has now finished his tour of duty and has been returned to his regiment. Lieut. Kennedy has been hurt and possibly is out of flying for good. This leaves just four men to handle the machines. To be sure Lieut. Hazlehurst has been detailed from the infantry to the flying squad, but he is only one, and as yet a novice.

Congress this year appropriated \$75,000 for aeronautics. The chances were that it would have given more had it been asked, but as Gen. Allen, the chief signal officer, said, "Where is the use of asking for more money when I haven't the men to handle the machines if I get them, and no telling where the men are to come from?"

Just one bright spot appears on the horizon, and that is in the activity of Representative Sharp of Ohio, who is taking an apparently intelligent interest in aviation. He has offered a resolution calling on the secretary of war for information as to the status of aeronautics in the army. The resolution when stripped of the preliminary verbiage, asks information on the following points:

First. The results of his investigations and the transmission of any reports made by our official agents in foreign countries as to the development and value of aerial navigation, either for the purpose of warfare or to encourage scientific research.

AUGUSTA FIELD FROM AN ARMY WRIGHT.

Second. The extent and cost of our government's equipment in aeroplanes or other air craft now being used in any capacity by the War Department, and the nature of the instruction in aeronautics which is being given to its Army officers and enlisted men.

Third. The plans now contemplated by the War Department for increasing the present equipment of aeroplanes,

hydroaeroplanes, and other air craft for the purposes of warfare and national defense, together with recommendations for such legislation as will adequately provide for such service with reference both to increasing the number of Army officers of the Signal Corps who may be detailed for aviation service as well as the establishment of additional schools of instruction and the building up of our air fleet commensurate with the necessity of properly maintaining our military status among the nations of the world.

WHAT THE SNOW DID AT AUGUSTA.

Much of this information is already in the hands of the secretary and more is being collected. When ready, it will be very cheerfully submitted to the House. It may mean the increase of the Signal Corps to an adequate complement of officers and men. The activities of the Signal Corps have so expanded in the past few years, what with handling cables and wireless and aviation, that it is now utterly impossible to do the work with all the men that can be begged and borrowed from other branches.

There is in existence a plan for organization covering the formation of field aeroplane companies. This plan will be discussed in detail if the additional officers are ever furnished. It is just possible that they will be, for even Congress is getting a little interested at the way this country is being left hopelessly in the rear by Europe. The recent action of France in preparing to spend \$4,800,000 on aeronautics this year gave even the self-centered Houses on the Hill a jolt.

The winter of the flying squad at Augusta had at least the advantage of keeping the few available men together, and leaving them as a small unit with which to start work this spring. But what happened to them in this snowless region of perpetual summer is indicated by a picture. They have been experimenting with some tent hangars, but have determined on nothing so far to be officially adopted for field service.

WILL FLY FOR FAMINE SUFFERERS' BENEFIT

OAKLAND, CAL., March 10.—Tom Gunn, the Chinese aviator who met with an accident at the recent local aviation meet, has so far recovered from his injuries as to be about, and is supervising the repairs to his Eaton biplane which is being assembled at the Aerial Machine Works here. Warren Eaton, of the firm of Eaton Brothers, of Los Angeles, is giving the work his personal attention, and has promised to have the aviator ready to fly within 10 days.

Gunn is planning to give an exhibition at Sunset Field for the benefit of the Chinese famine sufferers. He expects to leave for China in about two months, and will teach his countrymen the art of aviation, and will conduct experiments in conjunction with the Army of the Chinese Republic. He is having a large four-passenger military biplane built by

Eaton Brothers, from materials imported from France. The machine will be equipped with a 70-horsepower Renault motor, turning a French propeller geared two to one. Before leaving, Gunn expects to qualify for his professional pilot's license before the representatives of the Pacific Aero Club.

Gunn has already made a reputation among his countrymen in this city and San Francisco, and is backed by a syndicate composed of a number of them. He has carried a number of local Chinese as passengers. His Eaton biplane is equipped with a 60-horsepower Hall-Scott motor.

COMING AERO SHOW BOOMING

NEW YORK, March 16.—Affairs are reported as coming along finely with the Aero Show to be held in the New Grand Central Palace, New York, May 9-18, next. Although it is more than two months before the opening, a large number of the biggest people in the industry have secured first choice spaces. Among these are Curtiss, Gallaudet, Boland, White Aeroplane Co., Twombly Motors, Baby Model Engines, Goodrich, Frontier, Goodyear, Sturtevant, Electric Speedometer Co., Roberts, Diamond, American Aeroplane Co., Mea Magnetos, Kirkham, Max Ams Motors. Others are Aerial Construction Co., A. F. Mangels, Aero, F. A. O. Schwartz, W. A. C. Frost, H. W. Jacobs.

Loan exhibits will be made of various foreign machines, including the Paris-Madrid winner, Nieuport, Farman, Antoinette, Morane, Deperdussin and Bleriot, while home exhibits are promised of the Curtiss Gordon-Bennett winner of 1909, possibly the first Curtiss water machine "The Loon," the Burgess "Flying Fish," Chanute gliders, wind tunnel and other laboratory apparatus in working order from the Queen Company, and it is hopefully expected to have the original power machine of the Wright brothers and one of the Kitty Hawk gliders.

The management is counting on live exhibits from the Weather Bureau, the Navy and the Signal Corps of the Army, and it is expected to have one of the machines now being built for the Army under the last order.

Leo Stevens is building a special balloon, of hydrogen gas size, for the center of the building and a ticket office is to be established where visitors can buy rides in aeroplanes or balloons as one would purchase theater tickets. A full line of various sized balloon baskets have been offered by Stevens. Another item of rather unique interest will be an aviator's parachute, weighing about a pound, which is inclosed in a fabric bag and attached to the flyer's shoulders. A string instantly opens the bag, and the parachute will open shortly after the man gets clear of the aeroplane.

Negotiations are still pending for a big Parseval sight-seeing airship to make inter-city trips at show time and to circle the city nights with illuminated signs on the sides of the big bag. Horace Wild has promised the smaller Parseval he recently bought for the Illinois Aero Club, by April 15. The Zodiac dirigible will be represented by its car, which is now in this country.

It is quite possible, also, that the famous Austrian monoplane, the Etrich "Swallow," will be one of the loan exhibits. Moving pictures and lantern slide lectures will be

free to the public, days and evenings during the show.

A special committee is considering handicap conditions and rules for a hydroaeroplane race on the Hudson river immediately preceding the show for a special annual trophy. A number of water machines are already available for competition, several yet unheard of by the public. The rules will be such that all machines are on an even footing to bring out skill in operation, and reliability of the individual planes.

The operating company of the Palace, which has undertaken by an arrangement with the club under whose auspices the show has been announced, is fully cognizant of the state of the industry and intends to do everything in its power to help. It is fully realized that the coming show will be conducted at a considerable loss, and the future conduct of shows a few years hence, it is anticipated now, will be in the hands of the industry itself.

N. Y. AVIATION BILL ADVANCES

ALBANY, N. Y., March 16.—The question whether or not the aeroplane has reached the stage of perfection where it requires legislative notice, is still worrying the New York State Assembly. In spite of Assemblyman A. E. Smith's conviction that "legislation for aviation is insane legislation," the bill creating an aviation board to issue licenses for aviators and aeroplane was advanced in its passage by a considerable majority on Thursday. In the senate the bill is held in the judiciary committee.

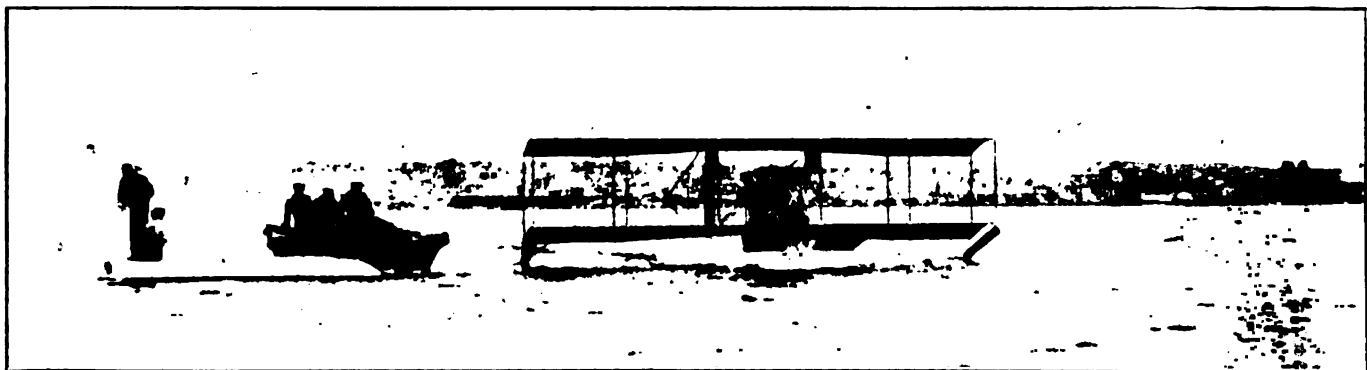
HYDRO GOES TO AVIATOR'S AID

SAN DIEGO, CAL., March 12.—Aviation as practiced by the Navy in the hydroaeroplane has been free from serious accidents, though involving an occasional ducking for the enthusiastic young officers who are training as winged scouts for the battle fleets of the nation. Ensign Victor D. Herbster had one of these experiences a few days ago while flying above the harbor here with a passenger. Mr. Herbster only qualified as an aviator a few weeks ago, his instructor having been Lieut. John Rodgers.

Ensign Herbster took out the Wright biplane, which the Navy recently converted into a hydroaeroplane by attaching the Burgess pontoons. With a civilian passenger, he was flying about 100 feet above the bay when the control failed to work. The machine fell, striking the water with one wing foremost, then turned completely over, the pontoons alone remaining above the surface. Pilot and passenger suffered no injury and in a few seconds had clambered on top of the capsize machine.

On shore their accident was seen by W. B. Atwater. The aviator rushed to his Curtiss hydroaeroplane with his mechanic, and dashed across the water to the rescue, followed by several boats, in one of which was Glenn H. Curtiss.

They found the Navy man in no danger. In fact, he refused to "abandon ship," and when the Navy launch arrived the ensign supervised the righting of his air and water craft, which will soon be flying and swimming again as required.



ONE HYDRO COMING TO THE AID OF ANOTHER AT SAN DIEGO.

KIRKHAM AVIATION MOTORS DESCRIBED

The advance specifications of the 1912 line of Kirkham aviation motors show many refinements of the details of this well-known motor, although the original design has proved so

Fig. 2 gives a cross-section of cylinder, piston and valves, the position of the two spark plugs for use with the Bosch two-spark magneto is clearly shown. Model B-6 is the same general construction as model B-4, the arrangement of the various parts being shown in Fig. 3. The mounting of this model in the Kirkham tractor type biplane is shown in

FIG. 1.

satisfactory that no radical change has been made. The line has been increased by the addition of model B 4, a four-cylinder motor produced to meet the demand for a lower power and lighter engine than the older standard six-cylinder types.

This model is rated at 35-horsepower, with a bore of 4 1/4 inches by a stroke of 4 1/4 inches. The actual brake horsepower at 1,300 revolutions per minute is 38.3. All the Kirkham motors are of the four-cycle type, with mechanical valves for both the intake and the exhaust, the valves are of the concentric type, and are located in the center of the cylinder

FIG. 2.

Fig. 1. Recent tests of the biplane have shown that the motor will handle the machine with ease. Since the weight, complete with aviator, is in the neighborhood of 1,200 pounds, this is a very good showing.

Model B-6 is rated at 50-horsepower; the cylinders are the same size as model B-4. When tested on the brake the horse-

FIG. 3.

head, a very advantageous position when thermal efficiency is considered.

The weight of model B14 is 185 pounds, or 4.8 pounds per horsepower. This motor will turn a 6-foot 8-inch diameter propeller of 4 foot 6 inch pitch 1,300 revolutions per minute, giving a standing thrust of 280-300 pounds. The gasoline consumption per hour is 21.5 pounds, with an oil consumption of two pounds per hour.

FIG. 4.

power developed was 54.5 at 1,300 revolutions per minute. The weight complete with magneto and plugs is 235 pounds. The thrust with a 7-6 by 4-6 propeller turning 1,300 revolutions per minute is about 400 pounds. Fig. 4 shows the special arrangement of the propeller shaft which is gear driven from the

7 feet 6 inches pitch; thrust, about 500 pounds. crankshaft in model B-G-6.

This motor is intended for use in machines of large surface or heavy types, or for any type if exceptional speed or power is desired. As this model is somewhat larger bore and stroke and is designed to run at higher speed, a special reduction gear is built into the end of crank case, reducing the propeller speed in the ratio of four to seven. This makes it possible to run the engine at its designed speed of 1,680 revolutions per minute and still use a large diameter and high pitch propeller, turning at an efficient speed. Thus the weight and bulk per brake horsepower is reduced while the efficiency of propeller increases, making the best possible combination for either large or fast machines of any type.

The specifications are: Rated horsepower, 70; bore, 4 5-16 inches; stroke, 5 1/4 inches; number of cylinders, six. Recommended speed, 1,680 revolutions per minute; corresponding propeller speed, 960 revolutions per minute; actual brake horsepower at recommended speed, 76.3. Exhaust opening, 2 3/4 inches diameter by 11-32 inch lift; inlet opening, 2 3/4 inches diameter by 5-16 inch lift. Ignition, Bosch magneto, using two plugs per cylinder; spark plugs, Bosch. Weight complete, 260 pounds. Gasoline consumption per hour at above speed, 45 pounds; oil consumption per hour at above speed, 4 pounds. Size propeller furnished regularly, 8 feet 6 inches diameter by



HOW TO MAKE PROPELLERS OR TRACTORS FOR MODEL AEROPLANES

By PEACY PIERCE.

The success of a flying model depends largely upon the efficiency and workmanship of its propeller or tractor. Most of the propellers used on man-carrying aeroplanes are laminated; that is, they are made up of layers of wood glued together, the grain of these strips running in different directions, which strengthens the propeller and gives opportunity for artistic work. For models, however, laminated propellers are not needed from a practical standpoint; they are harder to make and usually the model itself breaks before the propeller does.

When the screw or helix is placed at the rear of the machine and pushes, as in the case of the Curtiss, it is known as a propeller, whereas, when it is placed in front and pulls, as in the case of the Bleriot machine, it is properly known as a tractor, although the designation of "propeller" has become general, no matter where the screw is placed.

There are several designs in propellers, known as the Wright, Langley, Antoinette and others, but I will describe one that has proved to be all-around practicable.

To make a seven-inch propeller, a common size for models, with a fourteen inch pitch—which means theoretically that the propeller will travel forward fourteen inches with every revolution, not counting slip, which even the best propeller

has—get a block of white pine or other soft wood, 7 inches long, 1 inch thick and 1 1/4 inches wide and mark the shape of the propeller on both sides of the block as shown in A A, Fig. 1; then bore a hole through the center, from side to side, the size of the shaft to be used, as shown in B, Fig. 1. Cut around these marked lines with a jig-saw or by whittling out with a knife. When finished the "blank" will look like Fig. 2.

When one propeller is to be used, it is generally "right-handed." If two are required, one should turn to the left and the other to the right, thus overcoming the twisting tendency that exists in a model with but one propeller.

A right-hand propeller is one which, if observed from the rear while travelling forward, turns in the same direction as the hands of a clock. Of course a left-hand propeller turns in the opposite direction.

To carve a right-hand propeller from the blank, draw a curved diagonal line at each end of the blank as shown in C, Fig. 2. Cut out the portion D, starting at the dotted line E, Fig. 2, so that the blade will be slightly concave; that is, curved in, as shown in F, Fig. 3. Next cut out the back to follow the front. Care must be taken not to get the blade so thin as to weaken it, about 1/16 of an inch is a medium

thickness. Observe carefully how it is graduated around the hub; close around the shaft the wood is *not* cut away.

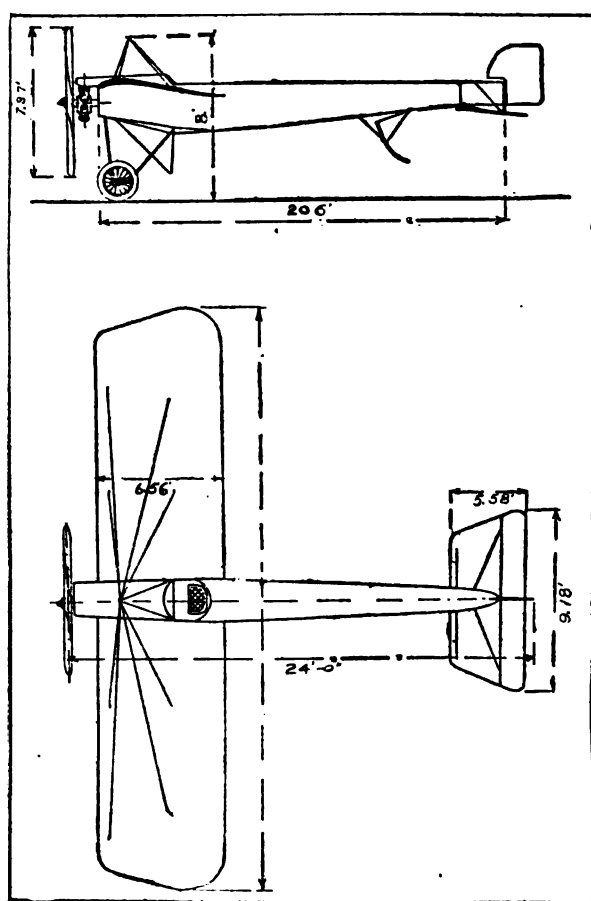
The same process is used for the other blade of the propeller. When the four sides are finished, the surfaces are thoroughly smoothed with sandpaper. The propeller should now appear like Fig. 4. The curved edge is always the leading edge in this propeller.

To make a left-hand propeller, draw the curved, diagonal, beginning at an opposite angle, and carry out the opposite cutting operation.

When the propellers are finished they should be given a thin coat of shellac, and when dry a second coat may be applied. This will produce a very highly polished surface from which the best results can be obtained.

Propeller blanks can be procured from almost any model supply dealer advertising in *AERO*, thus saving the trouble of cutting them out.

FOREIGN NOTES



Sommer Monoplane Described.—The recent performance of the Sommer monoplane, piloted by Bathiat, has directed the attention of designers to this machine. The line drawing above shows the latest machine, the particulars of which are as follows: Spread, 29 feet 2½ inches, with a length over all of 24 feet. The area of the main planes is 172 square feet. The weight of the machine in flight order, less pilot and supplies, is 570 pounds; when fitted with a 50-horsepower Gnome the total useful load is about 440 pounds, making the total load over 1,000 pounds. This gives a loading per square foot of 5.8 pounds. It was in a machine of this type, but slightly reduced, that Bathiat made his world's record for 200 and 300 kilometers, using a 70-horsepower Gnome motor. The speed attained being in excess of 93 miles per hour.

English Government School.—After careful consideration by the committee of imperial defense of Great Britain, it has been decided to establish a joint army and navy school of aviation at which officers of both services will be taught to

fly. Salisbury Plain has been selected as the site of the school. It is expected that the school will be ready to start teaching some time in April.

Long Aeroplane Flight.—According to cable reports, Maurice Tabuteau made a flight from Pau to the Villacoublay aerodrome, near Paris, stopping for lunch at Pottiers. He covered the total distance of 448 miles in five hours, at the rate of about 90 miles per hour.

Volplane Collapse Cause of Death.—At Pau, on March 13, Lieut. Henir Sevelle, while trying for his superior military certificate, completed two hours' flying by a steep volplane to earth. A wing collapsed and the officer was killed.

Honeymoon Trip in an Aeroplane.—The well-known aviator, Versiere, flew in his aeroplane to a field near the church at Avignon. After the marriage ceremony was performed, he and his bride mounted his machine and flew 100 miles to Nice, where the honeymoon is to be passed. He expects to fly to Genoa, Italy, and from there home to Paris.

Collision in the Air.—At Johannisthal, Germany, on March 13, a collision occurred between two aeroplanes while flying at a height of about 100 feet. Herr Schade, carrying a passenger, and Herr Rettinger, being the pilots. Both machines were wrecked, but the aviators were not hurt.

A Long Non-Stop Flight.—Lieut. Sylvestre flew with a passenger from Etampes to Sezanne and return, a distance of 205 miles, in four hours and 12 minutes without landing, recently.



A Letter from Orville and Wilbur Wright

To the Editor of *AERO*:

We are in receipt of information from Germany, regarding the recent action of the German Patent Office, nullifying the main claim of the Wright German patent. A letter from our attorney says:

"After the discussion of all of these points, the Division took one hour and a half to deliberate, and then pronounced as their judgment that claim 1 should be annulled on the disclosure contained in *L'Aeronaut*, page 103, passage 5, in connection with *Automotor*, of February 15, 1902, page 197, column 1, lines 2 to 4. The full grounds were not verbally pronounced. It was said that they would be given in writing."

The citation from *L'Aeronaut* is from a report of an address by Mr. Chanute before the Aero Club of France, in April, 1903, describing the experiments of the Wright brothers at Kitty Hawk, N. C., in 1902. The citation from the *Automotor* is a synopsis of the address of Mr. Wilbur Wright before the Western Society of Engineers in 1901, describing the experiments at Kitty Hawk, in 1901. The statement of Mr. Chanute which is cited as a disclosure of the Wright invention was as follows:

"To assure transverse equilibrium, the operator works two cords, which warp the right and left wings and at the same time adjust the vertical rear rudder."

Under the laws of Germany and France, a disclosure of an invention by the inventors, or by any one else, who has knowledge of it, before the application for a patent is filed, is sufficient to render the patent void. The disclosure must be sufficient to enable any one to understand how to build and use the invention.

The German Patent Office has taken the extreme position that these few words were sufficient to teach any one how to build and operate a flying machine in 1903, and that they canceled the right of the inventors to any property in their invention in Germany. The Wright brothers do not believe that this action of the Patent Office is based on a proper interpretation of the law, and will take an appeal to a higher tribunal.

The address of Mr. Chanute, on which the German decision turned, was delivered about two weeks after the date of the French application, and, therefore, could not be used against the Wrights in the French trial, which they won. The German application was not filed until after the date of this address by Mr. Chanute.

Very truly yours,

WRIGHT BROTHERS.

E. PERCY NOEL, Founder-Editor

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The Editor is pleased to consider MS and photographs for publication, but only material that is likely to prove of interest to the readers of Aero. The Editor cannot undertake to answer technical inquiries except in the columns of Aero.

A NECESSITY TO PROGRESS

The opening of the new Eiffel aerodynamical laboratory at Auteuil, France, marks the beginning of another epoch in the progress in aviation. The acknowledged superiority of the French nation in aviation is not the result of some happy thought, or genius of her foremost constructors, nor can it be assigned to the efforts of the early pioneers in that branch of mechanics. If the latter were true then

America would occupy the first place instead of a poor fifth.

There is no question that the early work of Langley, Chanute and the Wright brothers should have placed America in the van of progress. That she has not yet taken her proper place is deplorable, yet the reason is not far to seek.

As far back as 1906 several of the far-seeing men of France realized the important place that the aeroplane would occupy in military and civilian affairs, and proceeded to lay the foundation for French supremacy by the construction and operation of aerodynamical laboratories for the testing of aeroplanes and the fundamental laws of aerodynamics. Several of these laboratories have been in operation several years, with the result that machines designed from the data there obtained show that the efficiency and speed of the aeroplane has been increased almost 100 per cent in the past two years.

There is no question that there have been many heart-breaking disappointments, not to mention the loss of hundreds of thousands of dollars in this country caused solely by the ignorance and general misunderstanding of the aerodynamical laws governing aeroplane flight. This money alone, if it had been conserved to aviation, would have been sufficient to place America at the head of the list as an aviation power.

The lesson is obvious. In order to take the place in aviation which is ours by right of early achievement, we must have a laboratory for aerodynamical research. Remembering that the latest marvels of speed and weight-carrying are the direct result of experiments carried out in such laboratories, it is immediately only too plain what humiliation is in store for us next August when we meet the pick of the world in competition. Foreign constructors know exactly what their machines will do before they are built. With them it is merely a question of the results desired. A glance down the line of achievement shows only too truly America's position as a nation, a position which to our mind is in its entirety traceable to the want of exact knowledge in aerodynamics.

Gustave Eiffel has constructed at his own expense the most complete aerodynamical laboratory in the world in which tests are made free. The results already obtained have saved thousands of dollars and helped to place France in the position she now occupies as the "mistress of the air."

Are Frenchmen more patriotic than Americans? The inference is clear. Progress in aviation in America cannot be great until we have the use of this most modern methods of research, the aerodynamical laboratory.

Among the Aviators

CURTISS HYDRO HANGARS AT NORTH ISLAND, SANDIEGO, CAL.

Thomas Scott Baldwin and Lee Hammond have cabled that they are on their way home from Hongkong and will be in New York the latter part of April. It is reported that they have received \$200,000 for their services in the Orient.

W. B. Atwater, the Curtiss flier, has issued an open invitation to any member of the fair sex at Hotel del Coronado (Cal.) to accompany him on a flight over the bay. Miss Glenora Sears and Miss Jennie Crockett are said to be candidates.

Nels J. Nelson deliberately broke the Connecticut state law which prohibits unlicensed aviators from flying outside of their own fields, when he flew over the town of Newington, Conn., February 25, in his Kirkham motored biplane. The test of the law was successful, as he was not arrested before leaving for Hot Springs, Ark., March 7.

Lieut. John Rogers, U. S. N., is planning to attempt a flight from the deck of a torpedo destroyer going at the rate of 25 miles an hour. The machine will be tied to the deck and the engine started. When the boat attains its maximum speed the aeroplane will be cut loose.

L. A. Avery, who claims the distinction of being the heaviest amateur aviator, is going south in the near future to fly for fun on one of the Florida beaches. He weighs 205 pounds and operates a Wright.

Phil E. Taft, who learned to fly in the Erickson biplane, is about to try out a new hydroaeroplane called the Taft-Kingsbury, over the Connecticut river at Springfield, Mass. It is fitted with 35-horsepower Harriman motor and has a spread of 32 feet in the upper and 26 feet in the lower plane. Two pontoons are used.

Frank Coffyn was kept ashore in New York nearly all last week by very bad weather, but on Monday he took his Alger-Wright hydro out, flew over the bridges with a moving picture machine and afterwards out to the Statue of Liberty. On the way back he escorted the incoming American liner St. Louis, to the passengers' delight.

Max Lillie, the Wright flier who became so favorably known in the south during the winter, is now on the way to Chicago, where his machine has been shipped in care of his energetic manager, Frank Albert. Lillie expects to do cross-country work out of Chicago as soon as the weather moderates.

Norman Prince, who learned to pilot a Burgess for the fun of it, is now practicing law in Chicago; but he is said to be just as fond of aeroplaning as ever.

Howard Gill, recovered from his accident at Los Angeles, is now at Marblehead, Mass., where it is probable he will try out the tractor-type army plane which the Burgess Company and Curtis will deliver soon. It will be fitted with a Renault motor.

Keane M. Keane, who was among the aviators at the recent Hot Springs, Ark., exhibition, will soon bring out a hydro-aeroplane of a new type in Chicago.

Robert G. Fowler, the trans-continentalist, expects to fly

at Rome, Ga., on March 22. He has spent last week at Atlanta, Ga.

Richard Wickham, a British aviator, has obtained a concession at Long Beach, Long Island, to institute a passenger-carrying aeroplane service. His machine will carry four people besides the aviator. Wickham's plan is to fly over regular scheduled routes between Long Beach and other Long Island summer resorts.

Tom W. Benoist's newest machine, his military type, will be given its first trials at Kinloch field this week. It is a tractor, with two seats tandem, motored by a six-cylinder Roberts.

Weldon B. Cooke suffered a slight accident when he collided with the fence at the Emeryville race track, February 28, in his Nieuport-type monoplane. It was the first accident of his career. He was scheduled to fly the new plane again on March 10.

Jesse Seligman has been sued by the Moisant International Aviators in the Supreme Court of New York City to recover \$10,071.50. The Moisants assert that Seligman had contracted to make flights in various places in Panama and Costa Rica, but refused to fly. The \$71.50 sued for is for alleged hospital expenses of Seligman at Colon. The aviator's answer is a general denial.

Lieut. Theodore G. Ellyson, U. S. N., suffered an accident while flying at San Diego, Cal., last week, according to telegraph reports. An explanation of the accident has not yet been received, but it is understood that the officer's injuries are not serious.

Charles K. Hamilton, reports say, flew a distance of 42.7 miles from Sacramento to Maryville, Cal., last Friday, at an average speed of 78.9 miles an hour in a Curtiss biplane.

Walter Brookins, who has been flying a Burgess hydroaeroplane at Palm Beach, Fla., started for Marblehead, Mass., last Friday, where he will try out the new Burgess hydro which he expects to use for society passenger-carrying and instruction at the fashionable watering place known as Manhasset, Long Island, this summer.

FROM THE COMPASS POINTS

Bishop Sees Dirigible Future.—In a recent interview Cortland Field Bishop, vice-president of the International Aeronautic Federation, who sailed for Europe, March 14, said that Americans do not realize the possibilities of the dirigible because there have been few of them constructed here on account of the lack of hydrogen gas plants. Bishop will sit as a member of the International Aeronautic Congress in Vienna.

Fourth Ae. C. A. Secretary.—The fourth secretary the Aero Club of America has had in the past two months is Charles W. French, a former employee of Robert J. Collier. French was in Dayton last Saturday to interview the Wright brothers on the subject of the international aviation cup race.

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E. Percy Noel,
Secretary.

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1,019,782, March 19, 1912.—Joseph A. Goodwin, Berkley, Va. A flying machine including a fore-and-aft frame, and wings secured to the fore-and-aft frame and extending forwardly and upwardly from their inner to their outer ends, and at their outer ends positioned at a greater angle to the line of flight than at their inner.

1,019,858, March 12, 1912.—Joseph Junius Tanner, Clover, Utah. The combination with a shell open at its upper end and having an aperture in its lower end, and means for attaching the shell to an object, of a parachute normally stored within the upper portion of the shell, flexible means leading from the parachute and loosely through the shell and the aperture to the object to which the shell is connected, said means constituting the sole connection between the parachute and said object, a separable element mounted within the shell and beneath the parachute, said connection projecting through said separable element, means stored within the shell and below said element for ejecting the parachute and separable element, and means for releasing said ejecting means.

1,019,988, March 12, 1912.—Vine Mullendore, Denver, Colo. A flying machine comprising a cage formed of spaced rods or tubes and having a lower contracted portion and an upper expanded portion, a disk supported upon the upper ends of the rods and forming a central sustaining surface, superposed platforms supported upon the lower ends of the rods and dividing the contracted and expanded portions of the cage into compartments, a vertical shaft extending upwardly from the lower compartment above the cage, a lifting propeller carried by said cage, a pair of vertical shafts extending from the lower compartment into the upper compartment, driving propellers within the upper compartment driven from said shafts, wings projecting laterally from said disk or central sustaining surface, and motors supported upon the bottom platform within the lower compartment for respectively driving said shafts.

1,019,987, March 12, 1912.—Clarence C. Moore, Allenhurst, N. J. A flying machine embodying a supporting surface comprising a plurality of hood-shaped aerofoils arranged in following order, and each having the form of a section of a cone.

1,020,015, March 12, 1912.—Louis C. Badeau, New York, N. Y. A framework for an airship, comprising a keel a series of upwardly projecting rings secured thereto substantially at right angles, a second series of upwardly projecting rings of larger diameter secured to said keel eccentrically to the said other rings, whereby space is formed within the larger rings but outside of the smaller rings to receive the gas-container.

1,020,088, March 12, 1912.—Gallus von Glaubitz, Munich, Germany. A toy airship, consisting of a gas bag having the shape of a cigar when inflated, ring-shaped straps on said gas bag, caps on the ends of the gas bag and cords attached to said straps and caps respectively and carrying the car and bunting.

1,020,118, March 12, 1912.—Charles H. Tolliver, San Diego, Cal. An airship having a driving shaft, a flexible shaft thereto, a rigid propeller shaft connected with the other end of the flexible shaft, a propeller thereon, a globular bearing for said propeller shaft, a socket for said globular bearing in which it can be rotated in any direction, and means for turning said globular bearing in any direction in said socket.

1,020,275, March 12, 1912.—Ernesto Fuchs, Guadalajara, Mexico. A flying machine provided with a plurality of superposed supporting surfaces, telescopic stanchions slidably connecting said surfaces to permit them to be collapsed or to spread open under air pressure, locking means for holding the elements of the stanchions in a fixed position, and means for releasing said locking means.

1,020,342, March 12, 1912.—Robert Christopher Brandt, Oroville, Cal. An aeroplane comprising a framework, a supporting plane fixed on said framework, a seat pivotally supported from the said framework, an elevating plane mounted on the front of the framework, a rudder on the rear of the framework, two pairs of ailerons mounted to swing on the sides of the framework, a connection between one pair of ailerons and the said seat, an operating device for the said elevating plane and the said rudder, and a connection between the second pair of ailerons and the said operating means.

MONTGOMERY EXHIBITION SUCCESSFUL

MONTGOMERY, Ala., March 13.—Despite a week of almost incessant inclement weather, the aviation meet, automobile show and races at Montgomery, Ala., was a very pronounced success. Throughout the week from March 4 to 9, there were fair crowds, and J. S. Berger, who furnished the attractions, under the auspices of the Business Men's League, of Montgomery, acceded to popular requests and held the meet an additional day, which fell on Sunday, despite the natural objection on the part of some of the citizens. Immense crowds gathered at the grounds and the weather was clear and satisfying.

Paul Peck, in his Gyro-motored Columbia biplane, made many pretty flights that were graceful exhibitions. Harold Kantner in his Moissant monoplane was obliged to give up on Friday, on account of having his machine wrecked. The Gnome motor stopped and he was obliged to alight in a rough place. O. B. Sherwood, in his Schneider biplane, made good showing, as also did Fred Schneider. Heth and Mitchell in the Wright machines did good work.

The sensational flying of the meet was done principally by Oscar Brindley in his Wright machine.

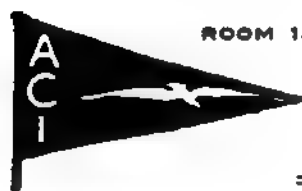
On Sunday afternoon the thousands at the grounds in Montgomery thought that Brindley had lost control of the machine. There were a few seconds when he was in danger. He was making spiral turns and dips at a distance of several hundred feet from the ground, when the machine turned at an angle, which looked to the spectators as if it were standing straight up and down, and seemed to fall for a considerable distance before it righted itself. Brindley sailed on in a level course again. A 50-mile automobile race was in progress at the time, and Sherwood had just tumbled to the ground from his Schneider biplane inside the hangar. The excitement, therefore, was sufficient for the crowds.

The Business Men's League of Montgomery passed a resolution highly favorable to Berger, manager of the company, stating that he had faithfully fulfilled every promise.

The aviators have now moved on to Birmingham, where an aviation meet, automobile show and races will be held, commencing April 8 and continuing for one week.

The opening of the meet will be unusual in many ways. One spectacular feature will be a race from Montgomery to Birmingham, between aviators and a special train on the L. & N. railroad. The aviators presumably will be Brindley, Peck, and two others, and Manager Berger is contemplating giving a prize of \$1,000 to the first aviator who arrives in Birmingham.

THE AERO CLUB OF ILLINOIS



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BULLETIN

On Thursday evening, March 21, at 3 o'clock, in the Auditorium Hotel, there will be the third session of the Technical Conferences at which Sydney V. James will address the meeting on the subject "Systematic Design, Conventional Types."

Other well qualified engineers will be present to make short addresses, and members of the Aero Club of Illinois are privileged to invite their technical friends to take part in this meeting, which is really the beginning of the deeper engineering discussions in connection with our aeronautical engineering work.

HAROLD W. ROBBINS, *Secretary*.

Second Trials

On Saturday morning, March 23, 10 a. m., the entrants in the Aero Club of Illinois model competition will meet at the club headquarters and adjourn first to the large banquet hall on the ninth floor of the hotel for the smaller flights, and afterwards to Grant Park on the lake front opposite,

where the more extensive flights will be accommodated if the weather permits.

As previously, the machines will be divided into two or three classes with separate prizes for each. It is expected that the participants will exceed in number by 100 per cent the exceptionally large crowd which was present at the first trials three weeks ago. An adequate staff of observers will be on duty to give everyone a satisfactory trial.

HAROLD W. ROBBINS, *Secretary*.

Crane Technical Model Club — Elimination Trials

At the session of the Model Club of the Crane Technical High School, Robey and Van Buren streets, Chicago, today, President Lender Jones presided over the discussion of plans by the 35 members of this very enthusiastic and active organization. It was decided to have the school elimination trials on Wednesday, the 20th inst., at which time the 12 or 18 gliders and power-driven models constructed by the members from the raw material, will be put in competition with each other. The best ones will be selected for entrants in the second preliminary trials of the Illinois Model Aero Club, with which the high school organizations are affiliated, and which will be conducted on Saturday of this week. It will be remembered that the Lanchester type gliders built by the Crane competitors, won prominent places in the first Aero Club of Illinois trials.

Gordon-Bennett Cup Contest At Chicago

CHICAGO, March 16.—James A. Blair, Jr., vice-president of the Aero Club of America, and W. Redmond Cross, who has been acting chairman of the Gordon-Bennett cup defense committee, met the officers of the Aero Club of Illinois and the International Aviation Meet Association here today to inspect the suggested location for the blue ribbon event of the year.

After a day spent in travelling from one part of the city to the other in automobile and train, the gentlemen were guests at an invitation dinner in the Auditorium, at which they expressed themselves as feeling well satisfied that the race could undoubtedly be held in Chicago in full accordance with the *Federation Aeronautique Internationale* regulations.

Chicago has sent formal resolution to be presented at the session of the officers of the Aero Club of America, Wednesday, the 20th inst., in which it has undertaken to make the necessary arrangements for holding the race here at a date dependent upon the best weather conditions to be based on the calculations of the United States Weather Bureau.

TEMPORARY HEADQUARTERS:

606 Columbia Building
Cor. 8th and Locust Sts.
Saint Louis

Individuals wishing to join and clubs desiring to affiliate with the Aviation Association of America are requested to communicate at once with the Temporary Chairman. There are no dues. The object of the Association is to encourage and regulate model and kite flying and gliding in America. Each member properly qualified will be furnished with the lapel emblem of the club. Notices of meetings of affiliated clubs will be published in this column.

San Francisco Club Affiliated

The Polytechnic Aero Club of San Francisco, Cal., has affiliated with the Aviation Association of America. The club was organized February 16, 1912. Waldemar Doyal is president, and Delbert Bliven, secretary-treasurer. The second meeting was held March 8, when it was decided to elect a vice-president, Harold Carnigle being named for that office. A committee consisting of W. Ruppel, Lance Butler and D. Brown was appointed by the president to make arrangements for a model aeroplane meet to be held in the near future. The secretary's address is First and Frederick streets, San Francisco. He will be pleased to hear from anyone desiring to join the club.

Hartford (Conn.) Club Formed

A new club has been organized among the members of the Young Men's Christian Association of Hartford, Conn., to be known as the Y. M. C. A. Aero Club. Perry Spencer and Clarence Tuaska have been appointed a committee to draw up constitution and by-laws.

The club plans to have an open meet in the spring, and invite contestants from other parts of the state to compete for prizes. The Young Men's Christian Association offers three prizes for the three longest flights over 500 feet made between now and May 1. First prize is 100 feet of 3-32-inch rubber; second prize is a pair of finished propellers, and third prize is "Model Flying Machines." One must be a club member to be eligible for these prizes, and his flights must be officially watched. Any boy in Hartford interested in the club is invited to attend one of the meetings.

Madison (N. J.) Enthusiasts Meet

The Junior Aeroplane and Wireless Club of Madison, N. J., met for its first demonstration, March 5, when a model glider contest was held in the Y. M. C. A. gymnasium. It was required that all models be made by the entrant.

There were two classes of contestants. Class A was limited to gliders not more than 15 inches in length, in which there were six entries. Wendell McM. Mooney captured first honors with a glide of 39 feet 2 inches. Class B was limited to gliders more than 15 inches in length. Calvin Elllover won with 46 feet 10 inches.

Pierce Model Flies 91 Seconds

PHILADELPHIA, PA., March 17.—At the first contest of the Philadelphia Model Aero Club here today at Fairmount Park, Percy Pierce won first place for distance with a flight of 1,554 feet, made with his racer No. 68. He also made unofficial flights of 2,628 and 2,706 feet. Oliver M. Prentice came second with 960 feet.

In the duration event, Percy Pierce broke the American record with a flight of 91 seconds; all during this flight the model attained a great altitude, and at times could not be seen. This flight came nearly being a world's record, which at present is 100 seconds duration. Pierce formerly held the American record with 61.25 seconds. Flights with his racer

of 72 and 74 seconds were repeatedly made. The day was ideal for model flying, with a gentle breeze of about five miles per hour blowing. The meet proved a great success in every way, and the next one will be held at the same place on March 24.

St. Louis Club to Meet Weekly

Forty enthusiasts attended the meeting of the St. Louis Model Aero Club, held at the Cabanne Branch Library, corner Fairmount and Union avenues, last Friday night. E. R. Armstrong, technical editor of AERO, and Antony Jannus, the aviator, gave brief talks, which were well received. Armstrong outlined an interesting competitive plan. He suggested that a certain number of members of the club build a model of the same type and then engage in a contest. This, he urged, would develop skill in construction and in operation. Jannus gave a graphic description of the operation of a full-sized Benoist biplane, which proved extremely interesting. A three-

PLANNING COLLEGE PLANE MEET

ITHACA, N. Y., March 16.—The Aero Club of Cornell has adopted tentative dates for the second annual Intercollegiate Aviation Meet, which will be held in Ithaca this year. These dates, April 26, 27 and 28, will be ratified at the meeting of the Intercollegiate Aeronautical Association, which will be held in New York April 1. The greater number of the leading universities in the east are to be represented at this meeting, including Cornell, Harvard, Princeton, Pennsylvania, Amherst, Williams, Dartmouth, M. I. T. and Penn State.

The energies of the club will now be devoted to making preparations for this meet. A glider of the monoplane type will soon be completed by members of the glider construction course, and as soon as the weather conditions are favorable, flights will be made with the gliders. The second balancing contest on the teacher will be held the latter part of this month.

WILL TRY SAFETY PARACHUTE

NANNAU BOULEVARD, LONG ISLAND, March 16.—For the first time for some months, a Curtiss machine is now being operated on Long Haven. Beckwith Havens, who, although he has been flying for over a year, has never found it convenient to take out his license, arrived here this week and set up his machine for the purpose of qualifying for the very useful piece of pasteboard. Havens, who has a passenger-carrying Curtiss, made a number of flights this afternoon. Next week he intends to do a little passenger carrying.

Incessant rain kept the aviators under cover most of the week. George W. Beatty, between showers, had out a few of his pupils. Apart from Beatty's flights and those of Havens, there has been no flying.

Arrangements are being made here for a parachute-jumping descent from an aeroplane similar to that so successfully made recently by A. Berry at St. Louis from the Benoist headless biplane. The jump is to be made by George Layham from Beatty's Wright biplane. Layham intends to make the drop from a height of 3,000 feet in a parachute designed by Leo Stevens. Stevens' contrivance is designed as an emergency aerial life-saving device. It consists of a simple parachute made considerably smaller than the apparatus now used by exhibition jumpers. It is fixed to the airman's back like a pack. The Italian hemp ropes of the parachute concentrate on a lifebelt which the airman wears around his body.

The moment he drops from the aeroplane he pulls a small ring fixed to one side of his waist. This immediately releases the folds of the parachute. As the body shoots downward the parachute is expected to open and gently lower the airman to the earth. Except that it is smaller in size, the parachute is exactly like the contrivance used in connection with balloons. Stevens believes it will check a fall from a height of 50 feet.

There was quite an exodus from Mineola on Wednesday when Roland Middleton, George E. Holt, Nels Nelsen, Frank Rodgers, Charles Hoeflich and Henry Snyder left for South America in company with Peter McLaughlin, who will act as their manager in a series of exhibition flights in Brazil, Venezuela, Chili and Peru.

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RARE BOOKS—Moedebeck's Handbook, English translation, now out of print, good condition, \$2.50. Hildebrandt's "Airships, Past and Present," \$1. Illustrierte Aeronautische Mitteilungen, Strasburg and Berlin, Vols. 1897 (first published), '98, '99, 1900, '03, bound in cloth; volumes '04, '05, '06, '07 unbound (all above 12 numbers to volume), and '08, '09 (26 numbers each); bound and unbound volumes complete, \$35. Vol. 1897, alone, \$10; other volumes \$5 and \$3. Address Box 248, care Aero, St. Louis.

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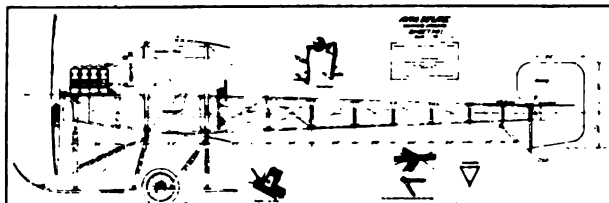
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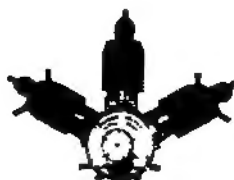
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